

# SEARCH REQUEST FORM Scientific and Technical Information Center - EIC2800

Rev. 1/26/2006 This is an experimental format -- Please give suggestions or comments to Jeff Harrison, JEF-4B68, 22511.

Date 3-27-06 Serial # 10/500873 Priority Application Date \_\_\_\_\_

Your Name ANDRE ALLEN Examiner # 78079

AU 2855 Phone 22174 Room 9A41 OR 8A65 AFTER 3/29

In what format would you like your results? Paper is the default. PAPER DISK EMAIL

If submitting more than one search request form, please prioritize the searches in order of need.

Where have you searched so far on this case?

Circle: USPT DWPI EPO Abs IPO Abs IBM TDB

Other: \_\_\_\_\_

What relevant art have you found so far? Please attach citations or Information Disclosure Statements.

NONE

What types of references would you like? Please checkmark:

Primary Refs ☒ Nonpatent Literature ☒ Teaching Refs ☒  
Secondary Refs ☒ Foreign Patents ☒ Other \_\_\_\_\_

Is this a "Fast & Focused Search" request? (Circle One) YES NO

A "Fast & Focused Search" is completed in 2-3 hours (maximum). The search must be on a very specific topic and meet certain criteria. The criteria are posted in EIC2800 and on the STIC NPL Web Page at <http://uspto-a-patrr-2/siraapps/stic/npl/nplsearch.htm>

What is the topic, such as the novelty, motivation, utility, or other specific facets defining the desired focus of this search? Please include the concepts, synonyms, keywords, acronyms, registry numbers, definitions, structures, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract and pertinent claims.

A ~~PROCESS~~ SEMICONDUCTOR / SENSOR STRUCTURE HAVING  
TERMINALS AND A RESIN INTEGRALLY MOLDING.  
THE MAIN ASPECT OF THE INVENTION IS HAVING  
AN ADHESIVE FILLED IN GAPS OR SPACES ONCE  
THE TERMINALS AND RESIN ~~AND~~ IS INTEGRALLY  
MOLDED

Staff Use Only

Searcher: Speckhard

Searcher Phone: \_\_\_\_\_

Searcher Location: STIC-EIC2800, JEF-4B68

Date Searcher Picked Up: 3/28/06

Date Completed: 3/28/06

Searcher Prep/Rev Time: 140

Online Time: 160

Type of Search

Structure (#) \_\_\_\_\_

Bibliographic ☒

Litigation \_\_\_\_\_

Fulltext ☒

Patent Family ☒

Other all

Vendors

STN ☒

Dialog ☒

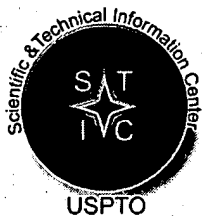
Questel/Orbit ☒

Lexis-Nexis \_\_\_\_\_

WWW/Internet ☒ EPO, Espacenet

Other WEST

JP PRIORITY  
B/F CITATION



# STIC Search Report

## EIC 2800

STIC Database Tracking Number: 183402

TO: Andre Allen  
Location: JEF 9a41  
Art Unit : 2855  
Tuesday, March 28, 2006

Case Serial Number: 10/500873

From: Irina Speckhard  
Location: EIC 2800  
JEFF-4B59  
Phone: (571) 272-2554

[irina.speckhard@uspto.gov](mailto:irina.speckhard@uspto.gov)

### Search Notes

Examiner Allen,

Please find attached prior-art search results from the patent and non-patent abstract and full-text databases. The results were based on claims and statements of technical problems and solutions. Tagged records might be worth your review as well as the rest of the references provided.

If you need further searching or have questions or comments, please let me know.

Thank you,

**Irina Speckhard**



# STIC Search Results Feedback Form

3

## EIC 2800

Questions about the scope or the results of the search? Contact *the EIC searcher* or contact:

Jeff Harrison, EIC 2800 Team Leader  
571-272-2511, JEF 4B68

## Voluntary Results Feedback Form

➤ I am an examiner in Workgroup:  Example: 2810

➤ Relevant prior art found, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not** found:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/EIC2800, CP4-9C18



Priority Applications (No Type Date): JP 99300886 A 19991022

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
JP 2001116639 A 4 G01L-009/04

Abstract (Basic): JP 2001116639 A

Abstract (Basic):

NOVELTY - A pressure sensitive sensor tip (1) is provided in resin case (3) which is integrally molded with a lead terminal (4). A bonding wire (5) connects the sensor tip and lead terminals. A sealing resin (8) fills the bonding portion of lead terminal and bonding wire (5). A water-proof chemical-resistant coating resin (6) fills the remaining portion of the resin case.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for manufacturing method of semiconductor pressure sensor

USE - For motor vehicles.

ADVANTAGE - Prevents the characteristic variation of pressure sensor tip with respect to measured pressure, and improvement in usage-resistant environment property and reliability are attained.

DESCRIPTION OF DRAWING(S) - The figure shows the assembly structure of semiconductor pressure sensor. (The drawing includes non-English language text).

Pressure sensitive sensor tip (1)

Resin case (3)

Lead terminal (4)

Bonding wire (5)

Coating resin (6)

Sealing resin (8)

pp; 4 DwgNo 1/3

40/3,AB/3 (Item 1 from file: 347)

DIALOG(R)File 347:JAPIO

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07442318

SEMICONDUCTOR PRESSURE SENSOR

PUB. NO.: 2002-310829 [JP 2002310829 A]

PUBLISHED: October 23, 2002 (20021023)

INVENTOR(s): MIYAZAKI ATSUSHI

KIKUCHI KATSUHIKO

EGUCHI KUNIYUKI

KAMIYANAGI KATSUMICHI

SAITO KAZUNORI

ASHINO KIMIYASU

APPLICANT(s): HITACHI LTD

FUJI ELECTRIC CO LTD

APPL. NO.: 2001-120891 [JP 2001120891]

FILED: April 19, 2001 (20010419)

ABSTRACT

PROBLEM TO BE SOLVED: To provide a semiconductor pressure sensor improved in airtightness holding characteristic.

SOLUTION: This semiconductor pressure sensor comprises a semiconductor chip for converting the pressure change of a measuring

40/3,AB/1 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2006 Thomson Derwent. All rts. reserv.

014363036

WPI Acc No: 2002-183737/200224

XRPX Acc No: N02-139923

Lead frame for **pressure sensor**, has **terminals** which is  
**integrally molded** and divided into two sections inside molded  
block

Patent Assignee: SAGIMIYA SEISAKUSHO KK (SAGI-N)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2002022588	A	20020123	JP 2000206509	A	20000707	200224 B

Priority Applications (No Type Date): JP 2000206509 A 20000707

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 2002022588	A		8 G01L-019/00	

Abstract (Basic): JP 2002022588 A

Abstract (Basic):

NOVELTY - The lead frame **terminals** (10) connected to  
electronic circuit (21), is connected to **sensor tip** (5).  
The **resin terminal block** (7) holding electronic  
circuit and **terminals** are molded **integrally** such that  
**terminals** are divided into two sections inside the block, and  
**resin** is removed at the portion where the **terminals** are  
divided.

USE - For measuring fluid pressure etc.

ADVANTAGE - **Pressure sensor** is manufactured using  
reduced number of parts and reduced number of processes, thus  
production cost is reduced and reflow soldering process is avoided.

DESCRIPTION OF DRAWING(S) - The figure shows a sectional view of  
the **pressure sensor**. (Drawing includes non-English language  
text).

Sensor tip (5)

Resin terminal block (7)

Lead frame terminal (10)

Electronic circuit (21)

pp; 8 DwgNo 1/6

40/3,AB/2 (Item 2 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2006 Thomson Derwent. All rts. reserv.

013900996

WPI Acc No: 2001-385209/200141

XRPX Acc No: N01-282792

Semiconductor **pressure sensor** for motor vehicles, has  
**sealing resin** which fills bonding portion of lead  
**terminal** and wire, and water-proof chemical-resistant coating  
**resin** which fills remaining portion of **resin case**

Patent Assignee: FUJI ELECTRIC CO LTD (FJIE )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2001116639	A	20010427	JP 99300886	A	19991022	200141 B

## SYSTEM:OS - DIALOG OneSearch

File 2:INSPEC 1898-2006/Mar W3  
(c) 2006 Institution of Electrical Engineers

File 6:NTIS 1964-2006/Mar W2  
(c) 2006 NTIS, Intl Cpyrght All Rights Res

File 8:EI Compendex(R) 1970-2006/Mar W3  
(c) 2006 Elsevier Eng. Info. Inc.

File 34:SciSearch(R) Cited Ref Sci 1990-2006/Mar W3  
(c) 2006 Inst for Sci Info

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec  
(c) 1998 Inst for Sci Info

File 35:Dissertation Abs Online 1861-2006/Mar  
(c) 2006 ProQuest Info&Learning

File 65:Inside Conferences 1993-2006/Mar 28  
(c) 2006 BLDSC all rts. reserv.

File 94:JICST-EPlus 1985-2006/Jan W1  
(c) 2006 Japan Science and Tech Corp(JST)

File 99:Wilson Appl. Sci & Tech Abs 1983-2006/Feb  
(c) 2006 The HW Wilson Co.

File 144:Pascal 1973-2006/Mar W1  
(c) 2006 INIST/CNRS

File 305:Analytical Abstracts 1980-2006/Mar W4  
(c) 2006 Royal Soc Chemistry

\*File 305: Alert feature enhanced for multiple files, duplicate removal, customized scheduling. See HELP ALERT.

File 315:ChemEng & Biotec Abs 1970-2006/Feb  
(c) 2006 DECHEMA

File 350:Derwent WPIX 1963-2006/UD,UM &UP=200620  
(c) 2006 Thomson Derwent

\*File 350: For more current information, include File 331 in your search.  
Enter HELP NEWS 331 for details.

File 347:JAPIO Nov 1976-2005/Nov(Updated.060302)  
(c) 2006 JPO & JAPIO

File 344:Chinese Patents Abs Jan 1985-2006/Jan  
(c) 2006 European Patent Office

File 371:French Patents 1961-2002/BOPI 200209  
(c) 2002 INPI. All rts. reserv.

\*File 371: This file is not currently updating. The last update is 200209.

File 23:CSA Technology Research Database 1963-2006/Mar  
(c) 2006 CSA.

File 987:TULSA (Petroleum Abs) 1965-2006/Mar W1  
(c) 2006 The University of Tulsa

Set	Items	Description
S1	32332	AU=(HAYASHI, M? OR HAYASHI M?)
S2	19833	AU=(KIKUCHI, K? OR KIKUCHI K?)
S3	287	AU=(EBINE, H? OR EBINE H?)
S4	52417	S1:S3
S5	6666	S4 AND (SEMICONDUCT? OR DETECTOR? OR COUNTER? OR SENSOR? OR SPECTROG? OR SPECTROMET? OR METER? ? OR METRE? ? OR FLOWMETER? ? OR FLOW()METER? ? OR GAUGE? OR INDICATOR? OR RECORDER? OR ANALYZER? OR SCANNER? OR COMPARATOR? OR INSPECTOR? OR MONITOR?)
S6	25	S5 AND IC=(G01L-009/00 OR G01L-019/14)
S7	14	S6 AND (EPOX??? OR RESIN? ? OR THERMOPLASTIC??? OR THERMO(-)PLASTIC??? OR THERMOSET? OR ELASTOMER?? OR RUBBER? ? OR ADHESIVE? ? OR ADHERE??? OR ATTACH??????? OR SECUR??????? OR CONNECT??????? OR STICK??????? OR SEAL?????????)
S8	14	RD (unique items)
S9	2	S8 AND (POLYMER???? OR HOMOPOLYMER????? OR COPOLYMER????? - OR PHENOLIC? OR ALKYD? OR POLYESTER? OR EPOXIDE OR SILICONE)
S10	12	S7 NOT S9
S11	11	S6 NOT S7
S12	5	S11 AND (TERMINAL? ? OR METALLIC?(2N)TERMINAL? ?)
S13	5	RD (unique items)
S14	6	S11 NOT S12
S15	6	RD (unique items)
S16	0	S15 AND SIGNAL?(2N)PROCESS???
S17	6	S15
S18	11793419	SEMICONDUCT? OR DETECTOR? OR COUNTER? OR SENSOR? OR SPECTROG? OR SPECTROMET? OR METER? ? OR METRE? ? OR FLOWMETER? ? OR FLOW()METER? ? OR GAUGE? OR INDICATOR? OR RECORDER? OR ANALYZER? OR SCANNER? OR COMPARATOR? OR INSPECTOR? OR MONITOR?
S19	181960	(PRESSUR? OR SEMICONDUCT?) (2N) (SENSOR? ? OR DETECTOR? ? OR MONITOR? ? OR METER? ? OR METRE? ? OR GAUGE? ?)
S20	11793419	S18:S19
S21	1686804	TERMINAL? ? OR METALLIC?(2N)TERMINAL? ?
S22	778107	SIGNAL?(2N)PROCESS???
S23	5668	IC=(G01L-009/00 OR G01L-019/14)
S24	11920025	EPOX??? OR RESIN? ? OR THERMOPLASTIC??? OR THERMO()PLASTIC-??? OR THERMOSET? OR ELASTOMER?? OR RUBBER? ? OR ADHESIVE? ? OR ADHERE??? OR ATTACH??????? OR SECUR??????? OR CONNECT?????-??? OR STICK??????? OR SEAL?????????)
S25	5702383	RESINOUS? OR SYNTHETIC? OR POLYMER???? OR HOMOPOLYMER????? OR COPOLYMER????? OR PHENOLIC? OR ALKYD? OR POLYESTER? OR EPOXIDE OR SILICONE
S26	20558	INTEGRALL??? (2N)MOLD????
S27	8000367	ADHESI? OR ADHERE? OR STICK? OR CLING? OR BOND? OR CEMENT? OR CONGLUTIN? OR AGGLUTIN? OR MUCILAG? OR TACK? OR GLUE? OR GLUING? OR PASTE? OR PASTING? ? OR GUM? OR HOLD? OR GRIP? OR GRASP? OR BIND?
S28	164398	ANAEROBIC
S29	188775	(FILL??? OR TERMINAL? ?) (2N) (GAP? ? OR SPACE? ? OR SLOT? ? OR OPENING? ? OR PIT????? OR MICROPIT? OR DEPRESSION? OR INDENT? OR MICROINDENT? OR CONCAV? OR CAVIT? OR INCURVAT? OR HOLLOW? OR HOLE? OR POCK? OR MICROPOCK? OR CRATER? OR MICROCRATER? OR APERTUR?
S30	313172	S20 AND S21
S31	147804	S30 AND (S24 OR S25)
S32	199	S31 AND S26
S33	6	S32 AND S29

03/28/2006

10/500,873

S34	6	RD (unique items)
S35	193	S32 NOT S33
S36	1	S35 AND S28
S37	192	S35 NOT S36
S38	76	S37 AND S27
S39	9	S38 AND S19
S40	9	RD (unique items)
S41	67	S38 NOT S39
S42	0	S41 AND S29
S43	22	S41 AND (GAP? ? OR SPACE? ? OR SLOT? ? OR OPENING? ? OR PI-T????? OR MICROPIT? OR DEPRESSION? OR INDENT? OR MICROINDENT? OR CONCAV? OR CAVIT? OR INCURVAT? OR HOLLOW? OR HOLE? OR POCK? OR MICROPOCK? OR CRATER? OR MICROCRATER? OR APERTUR????)
S44	22	RD (unique items)
S45	21	S44 AND S24
S46	1	S44 NOT S45
S47	85	S23 AND S29
S48	0	S47 AND S28
S49	66	S47 AND (S24 OR S25)
S50	18	S49 AND S21
S51	18	RD (unique items)
S52	18	S51 NOT S33,S36,S39,S43
S53	0	S52 AND S26
S54	10	S52 AND S27
S55	8	S52 NOT S54
S56	8	S55 AND S29



9/3,AB/2 (Item 2 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
(c) 2006 Thomson Derwent. All rts. reserv.

015517650

WPI Acc No: 2003-579797/200355

XRAM Acc No: C03-157103

XRPX Acc No: N03-460940

Pressure detector has lead terminal, chip capacitors and  
sensor unit terminal which are electrically connected in  
opening of external case

Patent Assignee: HITACHI CAR ENG CO LTD (HITA-N); HITACHI LTD (HITA );  
HITACHI CAR ELECTRONICS KK (HITA-N); EBINE H (EBIN-I); HAYASHI M (HAYA-I)  
; KIKUCHI K (KIKU-I); MIYAZAKI A (MIYA-I); SHIMADA S (SHIM-I)

Inventor: EBINE H; HAYASHI M; KIKUCHI K; MIYAZAKI A;  
SHIMADA S

Number of Countries: 029 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 1312907	A1	20030521	EP 20026550	A	20020320	200355 B
JP 2003149068	A	20030521	JP 2001351539	A	20011116	200355
US 20030094050	A1	20030522	US 2002101526	A	20020320	200355
KR 2003039985	A	20030522	KR 200214775	A	20020319	200359
US 6601453	B2	20030805	US 2002101526	A	20020320	200359
JP 3752444	B2	20060308	JP 2001351539	A	20011116	200618

Priority Applications (No Type Date): JP 2001351539 A 20011116

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

EP 1312907 A1 E 13 G01L-009/00

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT  
LI LT LU LV MC MK NL PT RO SE SI TR

JP 2003149068 A 9 G01L-019/14

US 20030094050 A1 G01L-009/00

KR 2003039985 A G01L-019/14

US 6601453 B2 G01L-009/16

JP 3752444 B2 12 G01L-019/00 Previous Publ. patent JP 2003149068

Abstract (Basic): EP 1312907 A1

Abstract (Basic):

NOVELTY - The pressure detector has a lead terminal for  
electrical connection with an outside and an external case (23)  
that is formed integrally with the lead terminal. A portion of the lead  
terminal is exposed into an opening of the external case. A pressure  
sensor unit terminal (6), the chip capacitors (36,37) and the  
lead terminal are electrically connected in the opening of the  
external case.

USE - Pressure detector equipped with chip capacitors for  
reducing electric disturbance.

ADVANTAGE - Provides a simple structure to compensate for the  
transient voltage resistance and electromagnetic failure resistance of  
the sensor, thereby reducing the cost and assembly man-hour  
associated with the compensation technique. Thus the pressure  
detector can easily respond to changing specifications.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view  
of the pressure detector.

Pressure sensor unit terminal (6)

External case (23)

Chip capacitors (36,37)

10/3,AB/3 (Item 3 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2006 Thomson Derwent. All rts. reserv.

015360508

WPI Acc No: 2003-421446/200339

XRPX Acc No: N03-336577

Sensor has electronic components arranged between  
semiconductor sensor chip and connector terminal, and  
are sealed with resin

Patent Assignee: HITACHI LTD (HITA )

Inventor: KIKUCHI K; MIYAZAKI A

Number of Countries: 023 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200336251	A1	20030501	WO 2001JP9145	A	20011018	200339 B
JP 2003538702	X	20050217	WO 2001JP9145	A	20011018	200513
			JP 2003538702	A	20011018	

Priority Applications (No Type Date): WO 2001JP9145 A 20011018

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 200336251	A1	J	22	G01L-009/00	
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Designated States (National): CN JP KR US

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU  
MC NL PT SE TR

JP 2003538702	X	14	G01L-009/00	Based on patent WO 200336251
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Abstract (Basic): WO 200336251 A1

Abstract (Basic):

NOVELTY - The electronic components (22,23) are arranged between a  
connector terminal (14) and a semiconductor sensor  
chip (1) which converts a physical quantity into an electrical signal.  
The casing (30) is formed by molding the lead material (13) and  
electronic components integrally with a resin.

USE - Sensor.

ADVANTAGE - None given.

DESCRIPTION OF DRAWING(S) - The figure shows a sectional view of  
the sensor.

semiconductor sensor chip (1)

lead material (13)

connector terminal (14)

electronic components (22,23)

casing (30)

pp; 22 DwgNo 1/5

10/3,AB/4 (Item 4 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2006 Thomson Derwent. All rts. reserv.

014878330

WPI Acc No: 2002-699036/200275

XRPX Acc No: N02-551170

Semiconductor pressure sensor has outer case formed of  
resin

Patent Assignee: HITACHI LTD (HITA ); KIKUCHI K (KIKU-I); MIYAZAKI A  
(MIYA-I); SUZUKI M (SUZU-I); TOMOSAKI R (TOMO-I)

Inventor: KIKUCHI K; MIYAZAKI A; SUZUKI M; TOMOSAKI R

Number of Countries: 028 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200279743	A1	20021010	WO 2001JP2622	A	20010329	200275 B
EP 1376090	A1	20040102	EP 2001917590	A	20010329	200409
			WO 2001JP2622	A	20010329	
US 20040055387	A1	20040325	WO 2001JP2622	A	20010329	200422
			US 2003469387	A	20030829	
JP 2002577524	X	20040722	WO 2001JP2622	A	20010329	200448
			JP 2002577524	A	20010329	
US 6964200	B2	20051115	WO 2001JP2622	A	20010329	200575
			US 2003469387	A	20030829	

Priority Applications (No Type Date): WO 2001JP2622 A 20010329

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 200279743	A1	J	27	G01L-009/04	
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Designated States (National): JP US

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU  
MC NL PT SE TR

EP 1376090	A1	E		G01L-009/04	Based on patent WO 200279743
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Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT  
LI LT LU LV MC MK NL PT RO SE SI TR

US 20040055387	A1			G01L-009/00	
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JP 2002577524	X			G01L-009/00	Based on patent WO 200279743
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US 6964200	B2			G01L-009/00	Based on patent WO 200275207
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Abstract (Basic): WO 200279743 A1

Abstract (Basic):

NOVELTY - The invention provides a small and reliable pressure sensor having a smaller number of components. A sensor unit (11) molded with resin includes a semiconductor chip (1) for converting the change in pressure of a medium through a hole into an electric signal. A lead material (12) connected electrically with the sensor unit has one end exposed to a connector (23). Pressure is applied to the semiconductor chip through a pipe (30). An outer case (21) is formed of resin by insert molding using the sensor unit, the lead material and the pipe.

DESCRIPTION OF DRAWING(S) - semiconductor chip (1)

sensor unit (11)

lead material (12)

outer case (21)

connector (23)

pipe (30)

pp; 27 DwgNo 1/5

10/3,AB/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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013710681

WPI Acc No: 2001-194905/200120

XRFX Acc No: N01-138785

Pressure sensor assembly procedure used for detecting pressure in fuel tank, involves sealing protection cover with pressure introduction unit outer wall via O-ring

Patent Assignee: NIPPONDENSO CO LTD (NPDE ); DENSO CORP (NPDE )

Inventor: BABA H; HAYASHI M; IMAI M; TAKAKUWA M

Number of Countries: 002 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2001013027	A	20010119	JP 200045143	A	20000217	200120 B
US 6575038	B1	20030610	US 2000550017	A	20000414	200340

Priority Applications (No Type Date): JP 99118563 A 19990426

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2001013027	A		11	G01L-019/00	
US 6575038	B1			G01L-007/00	

Abstract (Basic): JP 2001013027 A

Abstract (Basic):

NOVELTY - The protective cover (15) is sealed with the outer wall of the pressure introduction unit (1a) via O-ring (14) provided in the outer wall of unit (1a). The pressure introduction path (1b) in unit (1a) is connected with the opening (15a) of the protective cap (15).

DETAILED DESCRIPTION - The pressure introduction path (1b) introduces pressure to the sensor element (4).

USE - Used for detecting pressure in fuel tank of motor vehicle.

ADVANTAGE - The protection cap is reliably attached to the pressure introduction unit and the foreign material adhering to the sensor element is eliminated.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic sectional view of entire component of the pressure sensor.

Pressure introduction unit (1a)

Pressure introduction path (1b)

Sensor element (4)

O-ring (14)

Protective cap (15)

Cover (15a)

pp; 11 DwgNo 1/11

10/3,AB/10 (Item 5 from file: 347)  
DIALOG(R)File 347:JAPIO  
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07655211  
PRESSURE DETECTOR

PUB. NO.: 2003-149068 [JP 2003149068 A]  
PUBLISHED: May 21, 2003 (20030521)  
INVENTOR(s): MIYAZAKI ATSUSHI  
KIKUCHI KATSUHIKO  
EBINE HIROMICHI  
SHIMADA SATOSHI  
HAYASHI MASAHIRO  
APPLICANT(s): HITACHI LTD  
HITACHI CAR ENG CO LTD  
APPL. NO.: 2001-351539 [JP 2001351539]  
FILED: November 16, 2001 (20011116)

#### ABSTRACT

PROBLEM TO BE SOLVED: To provide a pressure detector which can deal easily with a change in specifications.

SOLUTION: A sensor unit 11 which detects a pressure and electronic components 35, 36 which reduce an electrical resistance are electrically bonded to a lead-terminal exposure part 24 in an opening 28 at an armor case 23, a thermosetting resin 38 is injected into the opening so as to be hardened, and the pressure detector in which the above members are fixed and bonded is obtained. An externally attached electronic component which supplements the transient voltage resistance and the electromagnetic interference resistance of a one-chip semiconductor sensor single body can be mounted, and the pressure detector which is miniaturized and made lightweight and low-cost by reducing an assembling man-hour is obtained.

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10/3,AB/11 (Item 6 from file: 347)  
DIALOG(R)File 347:JAPIO  
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06785546  
PRESSURE SENSOR AND ITS ASSEMBLY METHOD

PUB. NO.: 2001-013027 [JP 2001013027 A]  
PUBLISHED: January 19, 2001 (20010119)  
INVENTOR(s): TAKAKUWA MASAKI  
IMAI MASATO  
BABA HIRONOBU  
HAYASHI MICHITAKA  
APPLICANT(s): DENSO CORP  
APPL. NO.: 2000-045143 [JP 200045143]  
FILED: February 17, 2000 (20000217)  
PRIORITY: 11-118563 [JP 99118563], JP (Japan), April 26, 1999  
(19990426)

# ABSTRACT

**PROBLEM TO BE SOLVED:** To prevent contamination from depositing on a site where a pressure introduction part is sealed immediately before connecting to the counter member in a pressure sensor that assembles the pressure introduction part for introducing pressure to a sensor element part while the pressure introduction part is sealed to the counter member that is a body to be detected for fixing.

**SOLUTION:** A pressure sensor 100 is equipped with an introduction path 1b that introduces pressure to a sensor element part 4 for detecting pressure, and at the same time a pressure introduction part 1a that can be connected to the counter member. On the outer wall of the pressure introduction part 1a, an O ring 14 for sealing in the connection with the counter member is provided, and an O ring fixing part is covered with a removable protection cap 15 in advance for protecting before shifting to connection operation with the counter member. The introduction path 1b is connected to the outside by an opening 15a of the protection cap 15, and pressure characteristics can be inspected while the protection cap 15 is provided.

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10/3,AB/12 (Item 7 from file: 347)  
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01019344

SEMICONDUCTOR TYPE PRESSURE SENSOR

PUB. NO.: 57-169644 [JP 57169644 A]  
PUBLISHED: October 19, 1982 (19821019)  
INVENTOR(s): SUGIURA JUNJI  
OKADA HIROSHI  
HAYASHI MICHITAKA  
YAMAZAKI TORU  
SUGIMOTO HIROSHI

APPLICANT(s): NIPPON DENSO CO LTD [000426] (A Japanese Company or Corporation), JP (Japan)

APPL. NO.: 56-055835 [JP 8155835]

FILED: April 14, 1981 (19810414)

JOURNAL: Section: P, Section No. 169, Vol. 07, No. 15, Pg. 7, January 21, 1983 (19830121)

## ABSTRACT

**PURPOSE:** To prevent malfunction due to electromagnetic waves by enclosing a pressure sensor unit and a circuit unit with a conductive member except a pressure introducing part.

**CONSTITUTION:** Sensor units 2, 3 are electromagnetically shielded by enclosing the same with a conductive member, that is, a case 1, whereby electromagnetic interference is reduced. However, it is not possible to shield a pressure introducing part electromagnetically and therefore the effect of reducing electromagnetic waves depending upon the selection of the shape of an introducing part 13 is utilized. A capacitor 6 for by-passing is connected to each of input, output wires 5 to by-pass high frequency noises to the case 1, whereby the high frequency noise to be applied to the sensor unit sides is cut off.

13/3,AB/1 (Item 1 from file: 347)  
DIALOG(R)File 347:JAPIO  
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06863884

PRESSURE SENSOR TEMPERATURE COMPENSATION CIRCUIT

PUB. NO.: 2001-091387 [JP 2001091387 A]  
PUBLISHED: April 06, 2001 (20010406)  
INVENTOR(s): KONISHI YASUJI  
HAYASHI MASANORI  
APPLICANT(s): MATSUSHITA ELECTRIC WORKS LTD  
APPL. NO.: 11-272348 [JP 99272348]  
FILED: September 27, 1999 (19990927)

ABSTRACT

PROBLEM TO BE SOLVED: To obtain accurate detection output by compensating for even a secondary temperature fluctuation component to the temperature characteristics of the offset and span of a pressure sensor.

SOLUTION: The pressure sensor temperature compensation circuit is provided with a pressure sensor 11 that consists of resistances Rs1-Rs4 in a bridge circuit configuration while offset and sensitivity have negative and positive temperature fluctuation components in primary and secondary values, respectively, a span temperature correction circuit 13 for generating a voltage for achieving temperature characteristics with positive and negative temperature fluctuation components at primary and secondary values and applying the voltage to a power supply terminal

T1 of a pressure sensor 11 via a voltage follower 12 as a supply voltage, an offset temperature correction circuit 4 for generating a voltage for achieving temperature characteristics with positive and negative temperature fluctuation components at primary and secondary values, and a differential amplification circuit 15 for amplifying the detection signal of the pressure sensor 11 using a voltage being generated by the offset temperature correction circuit 14 as a reference voltage.

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06863882

BRIDGE SENSOR WITH FUNCTION OF DETECTING BREAKING OF WIRE

PUB. NO.: 2001-091385 [JP 2001091385 A]  
PUBLISHED: April 06, 2001 (20010406)  
INVENTOR(s): HAYASHI MASANORI  
KONISHI YASUJI  
APPLICANT(s): MATSUSHITA ELECTRIC WORKS LTD  
APPL. NO.: 11-272351 [JP 99272351]  
FILED: September 27, 1999 (19990927)

ABSTRACT

PROBLEM TO BE SOLVED: To make detectable the breaking of a wire in a

sensor without changing the characteristics of the sensor.

SOLUTION: The sensor 11 comprises resistances Rs1-Rs4 in a bridge circuit constitution with a power source terminal T1, ground terminal T2, and both output terminals T3 and T4. The sensor 11 is provided with an FET 12 provided between a power source of voltage VDD and the power source terminal T1 of the sensor 11 to drive or halt the sensor 11 according to switching-on or switching-off, a current generating part 13 to supply a constant current as a reference current for the sensor 11 from the power source terminal T1 at the time when the FET 12 is switched off, and a comparing part 14 to compare a voltage generated in the power source terminal T1 of the sensor 11 by the constant current supplied for the sensor 11 with a reference voltage and to detect the presence or absence of the breaking of a wire in the sensor 11 according to the result of the comparison.

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06863881

BRIDGE SENSOR WITH FUNCTION OF DETECTING BREAKING OF WIRE

PUB. NO.: 2001-091384 [JP 2001091384 A]  
PUBLISHED: April 06, 2001 (20010406)  
INVENTOR(s): KONISHI YASUJI  
HAYASHI MASANORI  
APPLICANT(s): MATSUSHITA ELECTRIC WORKS LTD  
APPL. NO.: 11-272350 [JP 99272350]  
FILED: September 27, 1999 (19990927)

#### ABSTRACT

PROBLEM TO BE SOLVED: To make detectable the breaking of a wire in a sensor without changing the characteristics of the sensor.

SOLUTION: The sensor 11 comprises resistances Rs1-Rs4 in a bridge circuit constitution with a power source terminal T1, ground terminal T2, and both output terminals T3 and T4. The sensor 11 is provided with both a current detecting part 12 provided between a power source of voltage VDD, and the power source terminal T1 of the sensor 11 to detect a current supplied for the sensor 11 from the power source of voltage VDD and a comparing part 13 to compare the detection result of the current detecting part 12 with a predetermined reference current and to detect the presence or absence of the breaking of a wire in the sensor 11 according to the result of the comparison.

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06752122



# PRESSURE SENSOR CIRCUIT

PUB. NO.: 2000-337982 [JP 2000337982 A]  
PUBLISHED: December 08, 2000 (20001208)  
INVENTOR(s): KONISHI YASUJI  
HAYASHI MASANORI  
APPLICANT(s): MATSUSHITA ELECTRIC WORKS LTD  
APPL. NO.: 11-147362 [JP 99147362]  
FILED: May 26, 1999 (19990526)

## ABSTRACT

PROBLEM TO BE SOLVED: To provide a pressure sensor circuit which can make temperature compensation without requiring any significant circuit change even when the characteristics of its pressure sensor change and can reduce the voltage and cost of an A/D conversion circuit.

SOLUTION: The output offset and sensitivity of a pressure sensor 1 vary depending upon the environmental temperature. An amplifier circuit 3 amplifies either one of the outputs of the sensor 1 and a temperature-sensitive circuit 2. A control circuit 7 reads out an offset correcting amount or span correcting amount from a memory 6 in accordance with the environmental temperature detected by means of the temperature-sensitive circuit 2. The offset correcting amount is converted into a current by means of a V/I conversion circuit 11 after the amount is converted into a voltage by means of a D/A conversion circuit 8 for offset correction and corrects the offset of the output voltage of the amplifier circuit 3 and inputted to the input terminal Iin of an A/D conversion circuit 4. On the other hand, the span correcting amount is converted into a current by means of another V/I conversion circuit 12 after the amount is converted into a voltage by means of a D/A conversion circuit 9 for span correction and inputted to the reference input terminal Iref of the conversion circuit 4.

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06628215

# PRESSURE SENSOR CIRCUIT

PUB. NO.: 2000-214029 [JP 2000214029 A]  
PUBLISHED: August 04, 2000 (20000804)  
INVENTOR(s): KONISHI YASUJI  
HAYASHI MASANORI  
SAKAMOTO SHINJI  
APPLICANT(s): MATSUSHITA ELECTRIC WORKS LTD  
APPL. NO.: 11-017708 [JP 9917708]  
FILED: January 26, 1999 (19990126)

## ABSTRACT

PROBLEM TO BE SOLVED: To lighten the process load on a control circuit.

SOLUTION: The circuit is equipped with an A/D converting circuit 17 that inputs the output voltage V10 of a pressure sensor 10 on which a reference offset voltage is superposed at its input terminal '+' from an amplifying

circuit 14, and a voltage having the same level with the offset voltage superposed on the output voltage V10 at its input '-' terminal from an EEPROM 15 to correct the offset voltage of the pressure sensor 10 with temperature and inputs a voltage having the same level with a span voltage included in the output voltage V10 from the EEPROM 15 at its reference voltage terminal to correct the span voltage of the pressure sensor 10 with temperature by dividing  $V10 - V12$  by  $V13$ . Further, the circuit has the EEPROM 15 which stores offset correction quantities and span correction quantities for the output voltage generation of D/A converting circuits 12 and 13 by environmental temperature, and a control circuit 16 which reads an offset correction quantity and a span correction quantity out of the EEPROM 15 corresponding to environmental temperature from a temperature sensing circuit 11 and outputs them to the D/A converting circuits 12 and 13.

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17/3,AB/1 (Item 1 from file: 347)  
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07077349  
PRESSURE SENSOR CIRCUIT

PUB. NO.: 2001-304994 [JP 2001304994 A]  
PUBLISHED: October 31, 2001 (20011031)  
INVENTOR(s): KONISHI YASUJI  
HAYASHI MASANORI  
APPLICANT(s): MATSUSHITA ELECTRIC WORKS LTD  
APPL. NO.: 2000-124573 [JP 2000124573]  
FILED: April 25, 2000 (20000425)

#### ABSTRACT

PROBLEM TO BE SOLVED: To shorten the time required for outputting detection results by a pressure sensor.

SOLUTION: The pressure sensor circuit comprises the pressure sensor 1 for generating detection signals of an analog quantity corresponding to a physical quantity to be detected and an integrating type A/D conversion circuit 11 for A/D converting the detection signals. The A/D conversion circuit 11 is constituted of resistors R1 and R2, switches SW1 and SW2, operational amplifiers OP1 and OP2, a capacitor C1, a clock 111 and a control logic 112. The control logic 112 controls the whole of the A/D conversion circuit 11, turning on the switch SW1 and turning off the switch SW2 from a starting time point of an input integration time to a time point after a predetermined time passes, and turning off the switch S1 and turning on the switch SW2 from the time point when the predetermined time passes to a time point when the comparison result that an output level of the operation amplifier OP1 crosses an AGND level can be obtained at the operational amplifier OP2. Moreover, the control logic controls to output a predetermined pulse train as an output of this pressure sensor circuit.

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06863870  
PRESSURE SENSOR CIRCUIT

PUB. NO.: 2001-091373 [JP 2001091373 A]  
PUBLISHED: April 06, 2001 (20010406)  
INVENTOR(s): HAYASHI MASANORI  
KONISHI YASUJI  
SAKAMOTO SHINJI  
APPLICANT(s): MATSUSHITA ELECTRIC WORKS LTD  
APPL. NO.: 11-272349 [JP 99272349]  
FILED: September 27, 1999 (19990927)

#### ABSTRACT

PROBLEM TO BE SOLVED: To provide a highly accurate and reliable pressure sensor circuit capable of canceling out the output offset of an

amplifier and obtaining correct output even if external environments such as the passage of time, humidity and the like change.

SOLUTION: This pressure sensor circuit is provided with switches S1-S6 as means to reduce the output offset voltage of an amplifier 13 contained in the output voltage V1 of the amplifier 13, and a switching control part to turn on the switches S1, S3, S4 and S6 and off the switches S2 and S5 at the time when input to the amplifier 13 is inhibited in an auto zero state, and to turn on the switches S2, S3, and S5 and off the switches S1, S4, and S6 at the time when input to the amplifier 13 is permitted, and to turn off the switch S3 at the time of a transition from the time when input is permitted to the time of inverse integration. The switching control part is provided for a control part 14b.

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06755262

D/A CONVERTER AND PRESSURE SENSOR CIRCUIT USING THE SAME

PUB. NO.: 2000-341127 [JP 2000341127 A]  
PUBLISHED: December 08, 2000 (20001208)  
INVENTOR(s): FUJIMURA TOSHIO  
HAYASHI MASANORI  
KONISHI YASUJI  
APPLICANT(s): MATSUSHITA ELECTRIC WORKS LTD  
APPL. NO.: 11-147325 [JP 99147325]  
FILED: May 26, 1999 (19990526)

#### ABSTRACT

PROBLEM TO BE SOLVED: To provide a D/A converter circuit with satisfactory linearity of output voltage with respect to a received digital value in spite of a comparatively low cost and to correct the span of a pressure sensor circuit by using the D/A converter circuit with high accuracy.

SOLUTION: A constant current circuit is configured with operational amplifiers OP1, OP2, MOSFETs Q1, Q2, Q3, Q4, Q5 and an R-2R ladder circuit 1. Thus, a current in response to a digital value received by the R-2R ladder circuit 1 can be extracted for the constant current circuit. A drain current of the MOSFET Q5 is given to a current-voltage conversion circuit 4, which outputs a voltage in response to the digital value received.

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06755261

D/A CONVERTER AND PRESSURE SENSOR CIRCUIT USING THE SAME

PUB. NO.: 2000-341126 [JP 2000341126 A]  
PUBLISHED: December 08, 2000 (20001208)  
INVENTOR(s): FUJIMURA TOSHIO

34/3,AB/1 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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012491153

WPI Acc No: 1999-297261/199925

XRPX Acc No: N99-223466

Coupling device for cover and main body of **scanner** - has engaging piece which **connects** cover and main body of **scanner** by inserting in **hollow terminal** of mutually parallel leg through groove hole of rotating center shaft receiving window

Patent Assignee: ACER PERIPHERALS INC (ACER-N)

Inventor: LEU W

Number of Countries: 002 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 11101219	A	19990413	JP 98187190	A	19980702	199925 B
JP 2985129	B2	19991129	JP 98187190	A	19980702	200002
US 6163927	A	20001226	US 9878600	A	19980514	200103

Priority Applications (No Type Date): TW 97U216360 U 19970925

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 11101219	A		5	F16C-011/04	
JP 2985129	B2		5	F16C-011/04	Previous Publ. patent JP 11101219
US 6163927	A			E05D-007/12	

Abstract (Basic): JP 11101219 A

NOVELTY - An engaging piece (141) **connects** the cover (1) and the main body (2) of a **scanner** by inserting in the **hollow terminal** of a mutually parallel leg (220) through the groove hole (110) of a rotating center shaft receiving window (10). DETAILED DESCRIPTION - The coupling device is **attached** to the side wall of the main body of the **scanner**. A stopper is **integrally molded** to the end of the leg. A cavity (130) is molded in the rotating center shaft receiving window.

USE - For cover and main body of **scanner**.

ADVANTAGE - Prevents cover from falling by which diagonal condition is maintained since cover is **connected** reliably to the main body of a **scanner**. Maintains diagonal condition

DESCRIPTION OF DRAWING(S) - The figure shows the isometric view of the structure of the coupling device. (1) Cover; (2) of a **scanner** Main body; (10) Rotating center shaft receiving window; (110); (130) Cavity; (141) Engaging piece; (220) Leg.

Dwg.3/7

34/3,AB/2 (Item 1 from file: 347)  
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06975443

MALE CONNECTOR ADAPTIBLE TO VARIOUS MODELS

PUB. NO.: 2001-203014 [JP 2001203014 A]  
PUBLISHED: July 27, 2001 (20010727)  
INVENTOR(s): ISAKI MASAHIRO  
ISHIZUKA HIRONORI  
KAJIZUKA HIDEJI

HORINAKA TAKUO  
HARADA MASAMI

APPLICANT(s): OKI ELECTRIC CABLE CO LTD  
APPL. NO.: 2000-010101 [JP 200010101]  
FILED: January 14, 2000 (20000114)

#### ABSTRACT

PROBLEM TO BE SOLVED: To cope with current difficulties of needs for newly manufacturing contact holders, housings, jigs and tools or the like, each time the number of poles of the counter connectors is changed, and of complex and uneconomical manufacturing processes.

SOLUTION: With the male connector adaptable to various models 1, a plurality of electrical terminals 5 arrayed in parallel and held and fixed with an insulating body 4 are integrally molded with both ends protruded, thus making up a basic electric terminal unit contact 2. A plurality of the electric terminal unit contacts 2 are stacked according to the number of poles of mating connectors and contained in a molded component main body 9. Further, earth terminal unit contacts the same shape as the electric terminal unit contacts are stacked at either or both sides of the latter, with the terminal pitch of both electric terminal unit contacts and the earth terminal unit contacts at a specified interval.

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34/3, AB/3 (Item 2 from file: 347)  
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04083282

#### SEMICONDUCTOR PACKAGE

PUB. NO.: 05-074982 [JP 5074982 A]  
PUBLISHED: March 26, 1993 (19930326)  
INVENTOR(s): ITO KATSUMI  
APPLICANT(s): SEIKO EPSON CORP [000236] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 03-236329 [JP 91236329]  
FILED: September 17, 1991 (19910917)  
JOURNAL: Section: E, Section No. 1404, Vol. 17, No. 401, Pg. 8, July 27, 1993 (19930727)

#### ABSTRACT

PURPOSE: To suppress the occurrence of the bending of a terminal in a container for handling, and secure the fixing to a board of a semiconductor package at mounting to the board, and besides, connect the terminal to the board pattern surely by solder.

CONSTITUTION: Fixing means 8 are molded integrally to be longer by proper dimensions than the tips of the terminals 5, together with a semiconductor chip 6, die pads 7 and terminals 3 by sealing material 2, at the four corners of the bottom of a semiconductor package. Moreover, the fixing member can be molded integrally simply by the partial modification of the mold, and inside the storage container for handling, a storage pocket and the terminal of a semiconductor package do not contact each other, so the occurrence of bending of the terminal can be suppressed. Moreover, when mounting it on the board, the process can be

simplified by mechanical setting type of fixing means, and the fixing can be performed surely. Furthermore, the solder inferiority between the terminal and the board pattern can be eliminated by the reforming the terminal.

34/3,AB/4 (Item 3 from file: 347)  
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03767863

ELECTROMAGNETICALLY INDUCED ROTATING SENSOR

PUB. NO.: 04-132963 [JP 4132963 A]  
PUBLISHED: May 07, 1992 (19920507)  
INVENTOR(s): SAITO HIDETOSHI  
KUME MASAHIRO  
APPLICANT(s): SUMITOMO ELECTRIC IND LTD [000213] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 02-256053 [JP 90256053]  
FILED: September 25, 1990 (19900925)  
JOURNAL: Section: P, Section No. 1409, Vol. 16, No. 402, Pg. 18, August 25, 1992 (19920825)

ABSTRACT

PURPOSE: To improve water proof and airtight property of a terminal unit and enhance mechanical strength by integrally molding a case housing a bobbin, a lead and a terminal with resin.

CONSTITUTION: A bobbin 5 wherein an end of a coil 4 is connected to a terminal 8 fixed on a rear part of a bobbin 5 and a magnetic pole 3 and a magnet 2 have been inserted and fixed inside is covered with a case 10 wherein a front part is opened and a rear part is closed by a rear wall integral with a surrounding wall with a terminal through hole 10a on the rear part. In addition, a flange 5a at the end of the bobbin 5 and the opening of the case 10 are connected and sealed with each other by means of resin welding, etc. Further a tip of the terminal 8 is made protrude out of the case 10 from the through hole 10a to be connected to a lead 7. Assembly of this rotating sensor 1 is completed by assembling the bobbin 5 into the case 5 in advance and molding 11 resin to integrally fix the rear part of the case 10, the tip of the terminal 8 and the lead 7. Thus in a simple process for assembling respective parts and molding, the sensor 1 which is excellent in airtightness and high in reliability can be obtained.

34/3,AB/5 (Item 4 from file: 347)  
DIALOG(R)File 347:JAPIO  
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02943552

SEMICONDUCTOR DEVICE

PUB. NO.: 01-241152 [JP 1241152 A]  
PUBLISHED: September 26, 1989 (19890926)  
INVENTOR(s): YOSHIMORI KENZO  
NAKANE HIROSHI  
APPLICANT(s): SEIKO EPSON CORP [000236] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 63-067340 [JP 8867340]

FILED: March 23, 1988 (19880323)  
JOURNAL: Section: E, Section No. 863, Vol. 13, No. 574, Pg. 101,  
December 19, 1989 (19891219)

ABSTRACT

PURPOSE: To prevent the deformation of **terminals** and the variation of **spaces** among the **terminals**, and to obviate the possibility of the intrusion of moisture from broken and peeled sections in a **resin** mold, by further scaling sections except electrical **connecting** sections in the **terminals** and a **sealing** section integrally with plastics, etc.

CONSTITUTION: A first **resin** package 7 and the whole sections except the nose sections of **terminals** 4 are molded integrally with plastics such as an **epoxy resin**, the package 7 and the **terminals** 4 are sealed by a second **resin** package 8, and the **terminals** 4 are fixed. Molten plastics permeate among each **terminal** 4 while the peripheries of the **terminals** 4 are coated with the plastics and the spaces and positions of respective **terminal** 4 are held accurately and fastened on the molding of the second **resin** package 8 at that time. Consequently, each **terminal** 4 can be held precisely at specified positions. Since the packages are composed of multilayers 7, 8, an effect on the other layer of a crack can be prevented even when the crack is generated in one layer, thus obviating the intrusion of moisture.

34/3,AB/6 (Item 5 from file: 347)  
DIALOG(R)File 347:JAPIO  
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01995226  
KNOCKING SENSOR

PUB. NO.: 61-209326 [JP 61209326 A]  
PUBLISHED: September 17, 1986 (19860917)  
INVENTOR(s): OZAKI MAKOTO  
MIYAHARA MASAHIKO  
YAMAGUCHI KIMIYAKI  
YOKOIWA SUMIHARU  
APPLICANT(s): NIPPON DENSO CO LTD [000426] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 60-051239 [JP 8551239]  
FILED: March 13, 1985 (19850313)  
JOURNAL: Section: P, Section No. 544, Vol. 11, No. 40, Pg. 46,  
February 05, 1987 (19870205)

ABSTRACT

PURPOSE: To attain to enhance assembling workability, by forming an output **terminal** into an L-shape to embed the base part thereof in a **connector** and providing piercing holes corresponding to the output **terminal** and the **connector** while passing a lead wire through said piercing holes to **connect** the output **terminal** and the **connector**.

CONSTITUTION: A plate shaped output **terminal** 7 is formed into an L-shape and a piercing hole 71 is provided to the base part of said L-shaped **terminal**. The piercing hole 61 corresponding to the piercing hole 71 is provided to the **connector** 6 integrally molded along with the output **terminal** 7 and the diameter of the



hole 61 outside said hole 61 is made larger than that of the piercing hole 71 and the hole part 612 inside said hole 61 is formed into a tapered form so as to easily pass a lead wire 8. The lead wire 8 is made long to be passed through the piercing hole 61 and pulled so as to be prevented from the contact with a vibration plate 5 or a housing 1 and, after the lead wire 8 is fixed to the piercing hole 71, the piercing holes 61, 71 are closed by an insulating air-tight agent. By this method, assembling workability becomes well and the shortcircuit or disconnection of the lead wire can be prevented.

medium to an electric signal, a resin case for housing the semiconductor chip, a lead terminal drawn out of the resin case and integrally molded therewith, and a connecting member for electrically connecting the semiconductor chip to the lead terminal. The resin case is formed of a thermosetting resin, and the difference between the average linear expansion coefficient from ordinary temperature to post-cure temperature of the thermosetting resin and the linear expansion coefficient of a metal material constituting the lead terminal is set to 3 ppm/deg;C or less.

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40/3,AB/4 (Item 2 from file: 347)  
DIALOG(R)File 347:JAPIO  
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07154208

WIRING MEMBER FOR PRESSURE SENSOR, PRESSURE SENSOR  
AND METHOD OF MANUFACTURING IT

PUB. NO.: 2002-022588 [JP 2002022588 A]  
PUBLISHED: January 23, 2002 (20020123)  
INVENTOR(s): KAMESAKA SEIJI  
APPLICANT(s): SAGINOMIYA SEISAKUSHO INC  
APPL. NO.: 2000-206509 [JP 2000206509]  
FILED: July 07, 2000 (20000707)

#### ABSTRACT

PROBLEM TO BE SOLVED: To provide a pressure sensor of high reliability having a small number of part items and requiring few man hours.

SOLUTION: A terminal with lead frame 10 is molded integrally with a terminal block 7 made of a resin for holding an electronic substrate 20. The upper and lower portions of the lead frame 10 serve respectively as a terminal portion and a lead frame portion soldered to a sensor chip 5 disposed on a diaphragm 4. Two split areas are formed in a portion of the lead frame 10 and the resin is removed from the portions of the terminal block 7 corresponding to those areas. The split areas of the lead frame 10 are soldered to wiring patterns on the electronic substrate 20. After the lead frame portion, the sensor chip, the areas, and the electronic substrate are soldered to one another, the lead frame portion is cut into portions corresponding to the wiring patterns and the areas are cut at their tops or bottoms.

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40/3,AB/5 (Item 3 from file: 347)  
DIALOG(R)File 347:JAPIO  
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05315862

PRESSURE SENSOR

PUB. NO.: 08-271362 [JP 8271362 A]

PUBLISHED: October 18, 1996 (19961018)  
INVENTOR(s): TSUYUKI HIROSHI  
APPLICANT(s): NOK CORP [000438] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 07-071616 [JP 9571616]  
FILED: March 29, 1995 (19950329)

ABSTRACT

PURPOSE: To reduce the number of assembling man-hours by reducing soldering positions.

CONSTITUTION: A diaphragm 4 is provided in the void space 3 of a case 1 to close a pressure guide hole 2, and a circuit board 6 assembled with a circuit amplifying the signal from a sensor element 5 on the diaphragm 4 is provided on the bottom face side of the void space 3. The circuit and the sensor element 5 are connected by wire bonding. One end of a terminal pin 9 is soldered to the circuit of the circuit board 6, and a shielding plate 7 having a feed-through capacitor 8 is provided in the void space 3 above the circuit board 6. The other end of the terminal pin 9 is inserted into the center section of the feed-through capacitor 8. A connector 10 is fitted to the opening section of the void space 3, and the other end of the terminal pin 9 is coupled with a hole 11a at one end of the connector pin 11 molded integrally with the connector 10.

40/3,AB/6 (Item 4 from file: 347)  
DIALOG(R)File 347:JAPIO  
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04715104

SEMICONDUCTOR PRESSURE SENSOR

PUB. NO.: 06-186104 [JP 6186104 A]  
PUBLISHED: July 08, 1994 (19940708)  
INVENTOR(s): OKUBO AKIRA  
ASHINO KIMIYASU  
KATO KAZUYUKI  
YAMADA KATSUMI  
APPLICANT(s): FUJI ELECTRIC CO LTD [000523] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 04-340809 [JP 92340809]  
FILED: December 22, 1992 (19921222)

ABSTRACT

PURPOSE: To provide the assembly structure, of a pressure sensor, which makes the mounting posture and the positioning of a semiconductor pressure sensor element incorporated in a resin case proper and enhances the quality of the pressure sensor.

CONSTITUTION: In a semiconductor pressure sensor, a resin case 3, a lid 6 applied to the upper face of the case 3, a lead terminal row 4 molded integrally with the resin case 3, a glass pedestal 2 which is accommodated in, and fixed to, a bottom-side recessed part 3 inside the case 3, a semiconductor pressure sensor element 1 mounted on the pedestal 2 and bonding wires connecting the pressure sensor element 1 to the lead terminal row 4 are assembled and constituted as main parts. In the semiconductor pressure sensor, a

protruding part 3b which carries and holds the glass pedestal 2 is formed on the bottom of the recessed part 3a in the resin case 3. Then, the protruding part 3b is used as a reference level, an adhesive 8 (a self-adhesive silicone adhesive provided with rubber elasticity in a hardened state) is filled into the recessed part 3a and the glass pedestal 2 is bonded and fixed to a definite position.

40/3,AB/7 (Item 5 from file: 347)  
DIALOG(R)File 347:JAPIO  
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02998924

#### HIGH-SENSITIVITY SEMICONDUCTOR PRESSURE SENSOR

PUB. NO.: 01-296524 [JP 1296524 A]  
PUBLISHED: November 29, 1989 (19891129)  
INVENTOR(s): HARA ATSUSHI  
APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 63-127818 [JP 88127818]  
FILED: May 24, 1988 (19880524)  
JOURNAL: Section: E, Section No. 890, Vol. 14, No. 85, Pg. 63, February 16, 1990 (19900216)

#### ABSTRACT

PURPOSE: To obtain a correct measurement value by detecting the pressure guided through a pressure guide port via the resistance change due to the deflection of a silicone diaphragm.

CONSTITUTION: A silicone diaphragm 3 is fixed to the center bottom of a plastic case 1 via a glass member 2, lead terminals 4 are integrally molded with the case 1, their ends are electrically connected to a gauge resistor (not shown in the figure) buried on the surface of the diaphragm 3 via bonding wires 5. The tip section of a needle-shaped projection 7 inserted into a hole provided at the center of a thin plate-shaped diaphragm 6 made of plastic and held by an adhesive or the like is brought into contact with the surface center of the diaphragm 3. On the other hand, the outer edge section of the diaphragm 6 is fixed to the cross section of the case 1 and a pressure shielding plate 8, this shielding plate 8 is fixed to the outer edge section of a cover 9. A space section formed by the diaphragm 6 and the cover 9 forms a pressure chamber 11 to apply the pressure of the guided fluid to the diaphragm 6 with the uniform distribution.

40/3,AB/8 (Item 6 from file: 347)  
DIALOG(R)File 347:JAPIO  
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02974473

#### PRESSURE SENSOR BUILT-IN SPARK PLUG

PUB. NO.: 01-272073 [JP 1272073 A]  
PUBLISHED: October 31, 1989 (19891031)  
INVENTOR(s): SAIKI YOSHIKI  
AMANO KOZO  
APPLICANT(s): NGK SPARK PLUG CO LTD [000454] (A Japanese Company or Corporation), JP (Japan)

APPL. NO.: 63-098169 [JP 8898169]  
FILED: April 22, 1988 (19880422)  
JOURNAL: Section: E, Section No. 878, Vol. 14, No. 38, Pg. 101,  
January 24, 1990 (19900124)

#### ABSTRACT

PURPOSE: To obtain a spark plug with high strength against heat and vibration and connect it at an electrically correct position by screwing the female screw section of a plug cap or a plug cord integrally molded with the plug cord so as to insert and hold a lead wire to a male screw section provided on a spark plug main body.

CONSTITUTION: A lead wire 16 is buried and held on the inner wall of the plug cap 17 of a pressure sensor built-in spark plug 1, a plug cord 14 is integrally held inside it. The female screw section 19 of this plug cap 1 is crowded to a male screw section 10 provided on the outer periphery of the barrel section 6 of the main body metal 5 of a plug main body 2. Positive and negative electrodes of the terminal section 9 of the lead wire 16 are extracted from a pressure sensor 8 stored in the barrel section 6 of the main body metal 5 respectively and connected to terminals 15 of the exposed positive and negative electrodes. The terminal electrode 3 of the plug main body is coupled with a connecting metal 13 provided on the cap 17 and electrically connected to the plug cord 14.

40/3,AB/9 (Item 7 from file: 347)  
DIALOG(R)File 347:JAPIO  
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02410824

#### SEMICONDUCTOR PRESSURE SENSOR

PUB. NO.: 63-027724 [JP 63027724 A]  
PUBLISHED: February 05, 1988 (19880205)  
INVENTOR(s): KOBAYASHI RYOICHI  
NAKAZAWA TERUMI  
APPLICANT(s): HITACHI LTD [000510] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 61-171115 [JP 86171115]  
FILED: July 21, 1986 (19860721)  
JOURNAL: Section: P, Section No. 725, Vol. 12, No. 235, Pg. 90, July  
06, 1988 (19880706)

#### ABSTRACT

PURPOSE: To enhance productivity and reliability, by using a housing having a lead frame integrally molded thereto in electrical connection between the input/output of a sensing part and a circuit substrate, and that between the input/output of the circuit board and a printed circuit board to bring the sensing part and the circuit board to a two-storied structure.

CONSTITUTION: A sensing part and a circuit substrate 7 are received in a housing 4 and, since only a pressure introducing part and the lead frame part 10 mounted to a printed circuit board are exposed to the outside, parts having weak bonding strength like electronic parts such as the lead of an operational amplifier do not go wrong by handling. Further, by using a housing having a lead frame integrally molded thereon in the electrical connection of the electrical connection circuit

7 of the sensing part and the circuit substrate 7 and the input and output terminals of a sensor, productivity is enhanced. Furthermore, by separating a closed pressure chamber 8 having the sensing part stored therein by the circuit substrate body, the electronic parts mounted on the circuit substrate are not directly exposed to pressure to be measured and reliability can be secured.

45/3,AB/1 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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013843271

WPI Acc No: 2001-327484/200134  
Related WPI Acc No: 2004-068761  
XRAM Acc No: C01-100432  
XRPX Acc No: N01-235553

Light module, e.g. brake lamp, for rearview mirror assembly of vehicle, includes bulb holder comprising terminals for connecting to illumination bulb and vehicle wiring, respectively, and housing for enclosing terminals

Patent Assignee: DONNELLY CORP (DONN-N)

Inventor: MILLER L E

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6227689	B1	20010508	US 99406966	A	19990928	200134 B

Priority Applications (No Type Date): US 99406966 A 19990928

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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US 6227689	B1	12	B60R-001/12		
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Abstract (Basic): US 6227689 B1

Abstract (Basic):

NOVELTY - A light module comprises a bulb holder. The bulb holder includes at least two first terminals for connecting to corresponding portions of an illumination bulb, at least two second terminals for connecting to an electrical wiring of vehicle, and housing for enclosing the terminals.

DETAILED DESCRIPTION - A light module (29) consists of a bulb holder (10) comprising at least two first terminals, at two second terminals, and housing (16). The first two terminals are connected to corresponding portions of an illumination bulb (22), and the second terminals are directly connected to an electrical wiring (18) of the vehicle. Each second terminal is connected to a corresponding first terminal to form a terminal member. The housing encloses the two terminal members and is mounted to the light module. INDEPENDENT CLAIMS are also included for (A) exterior rearview mirror assembly comprising mirror housing (28), reflective element (26), mounting portion (30), and the above illumination module; and (B) bulb holder.

USE - As brake lamp, turn-signal indicator, or security light (claimed) for an exterior rearview mirror assembly of a vehicle.

ADVANTAGE - The light module has low cost and facilitates easy installation to the mirror and easy electrical connection of vehicle wiring.

DESCRIPTION OF DRAWING(S) - The figure is a side view of an exterior rearview mirror.

Bulb holder (10)

Housing of bulb holder (16)

Electrical wiring of vehicle (18)

Illumination bulb (22)

Reflective element of mirror assembly (26)

Mirror housing (28)

Light module (29)

Mounting portion of mirror assembly (30)

pp; 12 DwgNo 2/7

45/3,AB/2 (Item 2 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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013478330

WPI Acc No: 2000-650273/200063

XRAM Acc No: C00-197256

XRPX Acc No: N00-482067

Revolution number **sensor** consists of a **connector** whose **terminal** is **integrally molded** to the interior of base

Patent Assignee: MATSUSHITA DENKI SANGYO KK (MATU )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2000258446	A	20000922	JP 9961303	A	19990309	200063 B

Priority Applications (No Type Date): JP 9961303 A 19990309

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 2000258446	A	7	G01P-003/488	

Abstract (Basic): JP 2000258446 A

Abstract (Basic):

NOVELTY - An **opening** formed in a metallic case (31) is occluded by a base (26). The **terminal** (30) of a **connector** (32) is **integrally molded** to the interior of the base. The base **holds** a magnet.

DETAILED DESCRIPTION - A magneto-resistive element is fixed to one surface of the substrate, and a magnet is fixed to another surface. One end of a base **terminal** is **connected** to processing circuit that converts the output signal of magneto-resistive element into pulse signal. The other end of base **terminal** is **connected** to magneto-resistive element.

USE - For detecting revolution number.

ADVANTAGE - Prevents increase in number of assembly process, even when the number of parts increases.

DESCRIPTION OF DRAWING(S) - The figure shows the sectional view of revolution number **sensor**.

Base (26)

**Terminal** of **connector** (30)

Metallic case (31)

**Connector** (32)

pp; 7 DwgNo 1/4

45/3,AB/3 (Item 3 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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013032658

WPI Acc No: 2000-204509/200018

XRPX Acc No: N00-152105

Position **sensor** e.g. throttle position **sensor** for automotive applications

Patent Assignee: CTS CORP (CTSC )

Inventor: KAIJALA M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
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Priority Applications (No Type Date): US 99232322 A 19990118

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6018992	A		7	G01M-015/00	

Abstract (Basic): US 6018992 A

Abstract (Basic):

NOVELTY - The termination clip includes a bight portion (160) which connects one set of fingers to opposing set of fingers. The finger sets are adapted to receive the **sensor** element (106) and support web (124) when the clip is installed for holding the **terminal** portion (109) against the conductive **terminals** (126).

DETAILED DESCRIPTION - The position **sensor** (100) comprises a housing (102) having an interior chamber (122) and a **terminal** support web (124) extending into the chamber. Several conductive **terminals** (126) are **integrally molded** with the housing, each of which has its one end in contact with the support web and other end extending outwardly from the housing. The **sensor** element (106) located within the chamber, has **terminal** portion (109) adapted for contacting the conductive **terminals**.

USE - For automotive applications.

ADVANTAGE - Since only one set of fingers is positioned between the web and rearward wall portion, the **space** between the web and rearward wall portion can be made smaller, thereby reducing overall size of the clip. Since point of contact between the clip and **sensor** element is relatively low, more room is available on the **sensor** element to route conductive traces. The configuration of clip makes it ideal for track feeding during assembly, since no re-orientation of the clip is required. The clip serves to axially retain the **terminal** portion of **sensor** element. When the cover is installed, any contact of the cover with the clip is less likely to affect termination forces against the web and **sensor** element. The lower portions of the finger hold the **sensor** element against the web without creating bending stress in the web. The free end below the curved portions of each finger is flared free, thereby facilitating installation of the clip over the web and **sensor** element.

DESCRIPTION OF DRAWING(S) - The figure shows the cross section of position **sensor**.

Position **sensor** (100)  
Housing (102)  
**Sensor** element (106)  
**Terminal** portion (109)  
Interior chamber (122)  
Support web (124)  
Conductive **terminal** (126)  
Bight portion (160)  
pp; 7 DwgNo 3/3

45/3,AB/4      (Item 4 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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012950511  
WPI Acc No: 2000-122361/200011  
XRPX Acc No: N00-093350

Power semiconductor module used in e.g. motor control charger,  
welder, uninterruptable power supply, light controller

Patent Assignee: SANSHA DENKI SEISAKUSHO KK (SAOD )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 11354662	A	19991224	JP 98179718	A	19980611	200011 B

Priority Applications (No Type Date): JP 98179718 A 19980611

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 11354662	A	4	H01L-023/04	

Abstract (Basic): JP 11354662 A

Abstract (Basic):

NOVELTY - The power semiconductor module has an external withdrawal terminal (4) is integrally molded on the circumference of a substrate. A burring hole (4c) is formed on the external withdrawal portion (4a) of the external withdrawal terminal which is embedded to the sidewall of a resin case (2).

DETAILED DESCRIPTION - The power semiconductor module has a copper circuit wiring pattern connected to a power semiconductor chip through wire bonding. A power semiconductor chip is attached in the copper circuit wiring pattern which is formed through an insulating layer on the substrate. The resin case covers the power semiconductor chip, in which a connection (4b) of the external withdrawal terminal is exposed in the resin case.

USE - Used in e.g. motor control charger, welder, UPS, light controller.

ADVANTAGE - Does not detach external withdrawal terminal according to external power. Ensures easy wire bonding due to enlarged size of connection. Prevents distortion on terminal since terminal and resin case are integrated without generating shrinkage cavity or welding defects. Ensures few terminal temperature increase since current density of terminal does not become large.

DESCRIPTION OF DRAWING(S) - The figure shows the bird's eye view of the power semiconductor module.

Resin case (2)

External withdrawal terminal (4)

External withdrawal portion (4a)

Connection (4b)

Burring hole (4c)

45/3,AB/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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012855159

WPI Acc No: 2000-026991/200003

XRAM Acc No: C00-007260

XRPX Acc No: N00-020179

Metallic mold for resin molded electric equipment - has resin adjusting space between gate and cavity and seal packing provided to divided surface so that it surrounds cavity

Patent Assignee: MITSUBISHI ELECTRIC CORP (MITQ )

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 11291270	A	19991026	JP 9897103	A	19980409	200003 B
JP 3616248	B2	20050202	JP 9897103	A	19980409	200511

Priority Applications (No Type Date): JP 9897103 A 19980409

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 11291270	A		8	B29C-039/26	
JP 3616248	B2		13	B29C-039/26	Previous Publ. patent JP 11291270

Abstract (Basic): JP 11291270 A

NOVELTY - The vacuum suction of the cavity (56) of metallic mold with vertical divided surface (55) is carried out. The resin injection hole (52a), gate (58), vacuum suction opening (53a) are p

46/3,AB/1 (Item 1 from file: 347)  
DIALOG(R)File 347:JAPIO  
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05050152  
ACCELERATION SENSOR

PUB. NO.: 08-005652 [JP 8005652 A]  
PUBLISHED: January 12, 1996 (19960112)  
INVENTOR(s): ICHIKAWA NORIO  
HANZAWA KEIJI  
OGASAWARA YUJI  
SUZUKI MASAYOSHI  
APPLICANT(s): HITACHI LTD [000510] (A Japanese Company or Corporation), JP  
(Japan)  
HITACHI KAA ENG KK [000000] (A Japanese Company or  
Corporation), JP (Japan)  
APPL. NO.: 06-133078 [JP 94133078]  
FILED: June 15, 1994 (19940615)

#### ABSTRACT

PURPOSE: To obtain an acceleration sensor in which the work environment for manufacturing the sensor is improved while reducing the cost by realizing an acceleration sensor having a plastic package structure comprising a plastic housing and a cap.

CONSTITUTION: The acceleration sensor 10 comprises a housing 1 molded integrally with lead terminals and a sleeve 2, a board 5 mounting a sensor chip 3 and an IC chip 4 for exclusive use, lead wires 11 for electrically interconnecting the sensor chip 3, the IC chip 4 for exclusive use, and the lead terminals, and a cap 7 bonded to the housing 1. The sleeve 2 is provided with a fixing leg part 14 having a sleeve fixing surface T stretching by an amount L from the rear surface S2 of the housing. A gap is formed between a fixing body 13 and the rear surface S2 of the housing in order to clear the deformation of the acceleration sensor 10 thus avoiding the adverse effect of deformation.

54/3,AB/3 (Item 3 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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016176631

WPI Acc No: 2004-334518/200431

XRAM Acc No: C04-127367

XRPX Acc No: N04-266937

Pressure sensor manufacturing method involves inserting **sealing** compound into hollow portion and solidifying it, so as to cover gap formed around **terminal** pins

Patent Assignee: TOYODA MACHINE WORKS LTD (TOZK )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2004061366	A	20040226	JP 2002221739	A	20020730	200431 B

Priority Applications (No Type Date): JP 2002221739 A 20020730

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 2004061366	A	14	G01L-019/14	

Abstract (Basic): JP 2004061366 A

Abstract (Basic):

NOVELTY - The **terminal** pins (10) are arranged on either sides of pressure surface (32) of the **connector** housing (30) inserted in the sensor housing. A **sealing** compound (12) having a polyamide **thermoplastic adhesive**, is inserted into a hollow portion (120) and is solidified, so as to cover the gap formed around the **terminal** pins.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for pressure sensor.

USE - For manufacturing pressure sensor.

ADVANTAGE - The **sealing** operation is easily and efficiently performed, and hence spillage of the liquid **adhesive** agent is effectively prevented. Thus, operability of the sensor, is highly improved.

DESCRIPTION OF DRAWING(S) - The figure shows a sectional view of the **connector** housing. (Drawing includes non-English language text).

**terminal** pins (10)  
**sealing** compound (12)  
**connector** housing (30)  
pressure surface (32)  
hollow portion (120)  
pp; 14 DwgNo 2/11

54/3,AB/4 (Item 4 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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012387903

WPI Acc No: 1999-194010/199917

XRAM Acc No: C99-057152

XRPX Acc No: N99-142301

Semiconductor fluid-pressure sensor - has input-output **terminal** passing through **hole** which has concentric large and small diameter portions and is filled with **rubber** adhesive agent such as **silicone** rubber

Patent Assignee: HOKURIKU DENKI KOGYO KK (HOKU-N)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 11037878	A	19990212	JP 97209928	A	19970718	199917 B

Priority Applications (No Type Date): JP 97209928 A 19970718

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 11037878	A		4	G01L-009/04	

Abstract (Basic): JP 11037878 A

NOVELTY - Both printed circuit board (14) and sensor case (10) are accommodated in a housing (20). Input-output **terminal** (16) passes through **terminal** passing through hole (24) in a housing. The through hole has concentric large diameter portion (24a) and small diameter portion (24b). Then the hole is filled with the **rubber adhesive agent** (26) such as **silicone rubber**.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for semiconductor pressure sensor assembling method.

USE - None given.

ADVANTAGE - Avoids leakage from a **terminal** passing through hole outwardly because of filler in a housing. Productivity is increased as input-output **terminal** has simple **attachment** structure.

DESCRIPTION OF DRAWING(S) - The figure shows the cross-sectional view of the pressure sensor (10) Sensor case; (14) Printed circuit board; (16) Input-output **terminal**; (20) Housing; (24) **Terminal** passing through hole; (24a) Large diameter portion; (24b) Small diameter portion; (26) **Adhesive agent**.

Dwg.1/4

54/3,AB/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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011398127

WPI Acc No: 1997-376034/199735

XRPX Acc No: N97-312231

On-site measuring instrument for measuring process-fluid pressure - has **terminal** block which is arranged around meter accommodation part and cover which closes **opening** to **terminal** block while allowing view of meter

Patent Assignee: YAMATAKE HONEYWELL CO LTD (HONF )

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 9159491	A	19970620	JP 95318892	A	19951207	199735 B
JP 3148884	B2	20010326	JP 95318892	A	19951207	200126

Priority Applications (No Type Date): JP 95318892 A 19951207

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 9159491	A		5	G01D-011/24	
JP 3148884	B2		5	G01D-011/24	Previous Publ. patent JP 9159491

Abstract (Basic): JP 9159491 A

The instrument has a housing (20) which serves as a meter body (2)

and has an opening at the front for **terminal connections**. A **terminal block** (5) is provided around the base of a tubular meter accommodation part (5B) which holds a meter (12) and projects to the front of the housing through an opening (22).

An external equipment is connected to the **terminal block** by a cable. A cover (23) provides a window for viewing the meter display and closes the opening to the **terminal block**.

ADVANTAGE - Provides small and light-weight instrument, reducing cost and fulfilling explosion proofness, by unobtrusively placing **terminal block** around meter accommodation part. Allows easy calibration of meter due to provision of cover. Offers easy cable installation due to provision of **terminal block** around meter.

Dwg.1/6

54/3,AB/6 (Item 6 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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011002605

WPI Acc No: 1996-499554/199650

XRPX Acc No: N96-421363

Sealed cavities for silicon@ wafer surfaces - by anodic bonding and using electrically insulated conductors through sealing areas to connect functional devices to electrical terminals outside

Patent Assignee: SENSOR AS (SENS-N)

Inventor: JAKOBSEN H; KVISTERØY T; KVISTERØY T

Number of Countries: 021 Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 742581	A2	19961113	EP 96850075	A	19960411	199650 B
JP 8306936	A	19961122	JP 96113021	A	19960411	199706
US 5591679	A	19970107	US 95421665	A	19950412	199708
			US 96593848	A	19960130	
EP 742581	A3	19970502				199729
JP 3073442	B2	20000807	JP 96113021	A	19960411	200042
KR 271386	B	20010115	KR 9610948	A	19960412	200206
EP 742581	B1	20021127	EP 96850075	A	19960411	200279
DE 69624973	E	20030109	DE 624973	A	19960411	200312
			EP 96850075	A	19960411	

Priority Applications (No Type Date): US 95421665 A 19950412; US 96593848 A 19960130

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

EP 742581 A2 E 18 H01L-021/00

Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

JP 8306936 A 13 H01L-029/84

US 5591679 A 16 H01L-021/77 Div ex application US 95421665

JP 3073442 B2 14 H01L-029/84 Previous Publ. patent JP 8306936

KR 271386 B H01L-021/00 Previous Publ. patent KR 96037894

EP 742581 B1 E H01L-021/00

Designated States (Regional): AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DE 69624973 E H01L-021/00 Based on patent EP 742581

Abstract (Basic): EP 742581 A

The method involves providing a passivation layer on top of the

epitaxial layer and the contact. The functional device is electrically connected to the contacts. A lid is placed over the functional device and part of the wafer surface, with a rim of the lid lying above buried conductors. The silicon wafer substrate and the lid are mutually aligned on a heater. An electric field is applied between the wafer and the lid.

The combined wafer and lid structure is heated to an elevated temperature to cause positive ions in the lid to be mobile and drift under the influence of the electric field towards interface at the wafer to create an electrostatic force which pulls the wafer and the lid together. The structure is cooled to immobilise the ions and remove the electric field.

ADVANTAGE - Provides different kinds of sensor in cost effective way.

Dwg.2/14

Abstract (Equivalent): US 5591679 A

A method for providing a sealed cavity means coactively with the surface of a silicon wafer forming a substrate and with electrically insulated conductor means across a sealing area formed between a lid means defining part of said cavity means and said wafer surface to connect functional device means inside said cavity means to electrical terminals outside said cavity means, comprising:

- a) providing an N type single silicon crystal substrate,
- b) carrying out a photomask step in which buried conductors are formed by ion to implantation of boron, using a photoresist on top of said substrate as a mask layer, followed by a drive-in diffusion step, in order to provide surface doping of insulated P-type areas for said conductors and without any steps in the substrate surface at the location of PN junctions thus provided,
- c) growing an epitaxial N type layer on top of said buried conductors and said top of said substrate adjacent said conductors to provide for said conductors being buried into single crystal silicon to be protected from surface effects,
- d) forming P type contacts extending from the top level of said epitaxial layer down to each end of said buffed P type conductors by a photomasking and doping step,
- e) providing a passivation layer on top of said epitaxial layer and said contacts,
- f) providing said functional device means and electrically connecting said functional device means to said contacts,
- g) providing said lid means over said functional device means and part of said wafer surface, thereby positioning at least part of a rim of said lid means to lie above said buried conductors,
- h) positioning said silicon wafer substrate and said lid means in a mutually aligned state on heating means,
- i) applying an electric field between said wafer substrate and said lid means,
- j) heating the combined wafer substrate and lid means structure to an elevated temperature to cause positive ions in said lid means to be mobile and drift under the influence of said electric field towards interface at said wafer substrate to create an electrostatic force which pulls said wafer substrate and said lid means together to atomic level intimate contact, and
- k) cooling said combined structure to immobilize said ions to maintain at least part of said electrostatic force and bond said wafer substrate and said lid means together, and removing said applied electric field.

5,12b,12e/



54/3,AB/7 (Item 1 from file: 347)  
DIALOG(R)File 347:JAPIO  
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07988591  
SENSOR DEVICE

PUB. NO.: 2004-101350 [JP 2004101350 A]  
PUBLISHED: April 02, 2004 (20040402)  
INVENTOR(s): ODA TERUO  
APPLICANT(s): DENSO CORP  
APPL. NO.: 2002-262966 [JP 2002262966]  
FILED: September 09, 2002 (20020909)

#### ABSTRACT

PROBLEM TO BE SOLVED: To provide a sensor device formed by integrating a metal housing with a resin connector part having a terminal pin, improved in bonding strength of a joint part between the housing and the connector part by eliminating the need of caulking.

SOLUTION: The sensor device includes: a metal-made housing 10 having a hollow part 11; a metal-made terminal pin 20, one end of which is inserted in the hollow part 11 of the housing 10; a sensing element 30 electrically connected to the terminal pin 20, and a resin case 40 provided on the outer periphery of the other end of the terminal pin 20 and constituting a connector part for connecting to the outside with the terminal pin 20. The resin case 40 is integrated with the housing 10 and the terminal pin 20 with a part thereof filled in the hollow part 11 by performing insert molding with one end of the terminal pin 20 inserted in the hollow part 11 of the housing 10.

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54/3,AB/8 (Item 2 from file: 347)  
DIALOG(R)File 347:JAPIO  
(c) 2006 JPO & JAPIO. All rts. reserv.

06096360  
PRESSURE SENSOR AND METHOD FOR ASSEMBLING THE SAME

PUB. NO.: 11-037878 [JP 11037878 A]  
PUBLISHED: February 12, 1999 (19990212)  
INVENTOR(s): SAWAMURA HIROYUKI  
APPLICANT(s): HOKURIKU ELECTRIC IND CO LTD  
APPL. NO.: 09-209928 [JP 97209928]  
FILED: July 18, 1997 (19970718)

#### ABSTRACT

PROBLEM TO BE SOLVED: To ensure air tightness between a housing and an input and output terminal with a simple structure.

SOLUTION: This pressure sensor is provided with a housing 20 made of resin in which a print board 14 and a sensor case 10 are housed, and

a terminal insertion hole 24 being a hole formed at a housing 20. The terminal insertion hole 24 is constituted of a large diameter part 24a and a small diameter part 24b, and rubber-based adhesive 26 such as a silicone rubber having elasticity is packed in the terminal insertion hole 24. This rubber-based adhesive 26 is put through the terminal insertion hole 24, and a bar-shaped input and output terminal 16 is inserted into the terminal insertion hole 24.

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54/3,AB/9 (Item 3 from file: 347)  
DIALOG(R)File 347:JAPIO  
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05795267  
PRESSURE SENSOR AND IS ASSEMBLING METHOD

PUB. NO.: 10-078367 [JP 10078367 A]  
PUBLISHED: March 24, 1998 (19980324)  
INVENTOR(s): SAWAMURA HIROYUKI  
APPLICANT(s): HOKURIKU ELECTRIC IND CO LTD [327816] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 08-253780 [JP 96253780]  
FILED: September 04, 1996 (19960904)

#### ABSTRACT

PROBLEM TO BE SOLVED: To closely mount a housing to an input and output terminal with a simple structure by filing an elastic rubber adhesive into a terminal insert hole, inserting the input and output terminal to the terminal insert hole after the adhesive is dried or hardened and stabilized.

SOLUTION: A housing 20 has an atmospheric pressure inlet part 22 and a terminal insert hole 24. A sensor case 10 is bonded to the atmospheric pressure inlet part 22 in airtight state by use of an epoxy adhesive. The terminal insert hole 24 is preliminarily filled with a silicon rubber adhesive 26 having a proper elasticity and blocked. In assembling, the dried or hardened adhesive 26 is broken by the tip of an input and output terminal 16, and the input and output terminal 16 is inserted to the terminal insert hole 24. Since the adhesive 26 has a proper elasticity, the adhesive 26 is closely fitted to the inside surface of the terminal insert hole 24 and the side surface of the input and output terminal 16. The housing 20 and the input and output terminal 16 can be surely mounted in airtight state with a simple process.

54/3,AB/10 (Item 4 from file: 347)  
DIALOG(R)File 347:JAPIO  
(c) 2006 JPO & JAPIO. All rts. reserv.

03585129  
SEMICONDUCTOR PRESSURE SENSOR

PUB. NO.: 03-248029 [JP 3248029 A]  
PUBLISHED: November 06, 1991 (19911106)  
INVENTOR(s): YANO AKIHIRO

APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 02-047703 [JP 9047703]  
FILED: February 27, 1990 (19900227)  
JOURNAL: Section: P, Section No. 1306, Vol. 16, No. 42, Pg. 80,  
January 31, 1992 (19920131)

#### ABSTRACT

PURPOSE: To measure stabilized pressure even for external shock and the change in external environment by leading out **terminals** which are soldered to the end parts of a ceramic substrate on which a sensor chip is mounted through holes in a molding material, and **bonding** a stage that is **bonded** to the substrate and the molding material at the same time.

CONSTITUTION: A sensor chip 1 is **bonded** to the first surface of a ceramic substrate 2. A stage 3 is **bonded** to the second surface of the substrate 2. The stage has an introducing hole. **Terminals** are soldered to the end parts of the substrate 2. When the substrate 2 to which these components are **attached** is fixed to a molding material 5, the **terminals** are led out through holes 15. The stage 3 is **bonded** to the molding material 5 at the same time. Thereafter, a cap 6 is **bonded**. The stage is tightly **sealed** in a package comprising the molding material 5. Thus, pressure which is applied through a pressure introducing port 9 reaches a diaphragm part 8 of the chip 1 by way of the introducing hole of the stage 3 and the hole in the substrate 2 without leaking to the outside. The electric signal corresponding to the deflecting amount of the diaphragm induced by the pressure is taken out through the **terminals**.

56/3,AB/2 (Item 2 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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016008663

WPI Acc No: 2004-166514/200416

Related WPI Acc No: 2004-178982; 2004-190190

XRPX Acc No: N04-132645

Condition responsive transducer e.g. pressure transducer has resilient grommet mounted on connector, having through holes in which terminals of sensor are inserted

Patent Assignee: TEXAS INSTR INC (TEXI )

Inventor: DIPAOLO D J

Number of Countries: 002 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6672170	B1	20040106	US 2002394904	P	20020710	200416 B
			US 2003341296	A	20030113	
JP 2004101515	A	20040402	JP 2003194045	A	20030709	200424

Priority Applications (No Type Date): US 2002394904 P 20020710; US 2003341296 A 20030113; US 2002394903 P 20020710; US 2002394949 P 20020710

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6672170	B1	28	G01L-009/00	Provisional application US 2002394904	
JP 2004101515	A	25	G01L-019/14		

Abstract (Basic): US 6672170 B1

Abstract (Basic):

NOVELTY - A connector (106) mounts the electrical terminals of a sensor (22). A cylindrical resilient grommet (112) having through holes, circumferential groove and cylindrical protrusions, is mounted on the cavity of the connector. The extension of the terminals are inserted into the through holes. A cap (114) has a catch (114b) received by a recess (106b) of the connector, which retains the grommet.

USE - Condition responsive transducer e.g. pressure transducer having strain gauge sensor.

ADVANTAGE - The grommet provides optimum compression to electrical terminals of the sensor, while the cylindrical protrusion of grommet prevents over-compression. The cap seals the sensor from outer environment, thus preventing the damage of sensor.

DESCRIPTION OF DRAWING(S) - The figure shows a longitudinal cross-sectional view of the pressure transducer.

sensor (22)  
transducer (100)  
connector (106)  
recess (106b)  
grommet (112)  
cap (114)  
catch (114b)  
pp; 28 DwgNo 14/14

56/3,AB/3 (Item 3 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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012099063

WPI Acc No: 1998-515974/199844

XRPX Acc No: N98-403325

Pressure detector for hydraulic type power steering in motor vehicle - includes resistance film which has electric resistors and positioned on upper surface of disk spring which is positioned inbetween piston and terminal

Patent Assignee: TOYODA MACHINE WORKS LTD (TOZK )

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 10227711	A	19980825	JP.9746937	A	19970217	199844 B
JP 3379374	B2	20030224	JP 9746937	A	19970217	200317

Priority Applications (No Type Date): JP 9746937 A 19970217

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 10227711	A		6	G01L-023/18	
JP 3379374	B2		5	G01L-023/18	Previous Publ. patent JP 10227711

Abstract (Basic): JP 10227711 A

The detector has an housing (22) with an accommodation hole (23) provided at one of its ends. A slide hole (24) which extends till the accommodation hole is provided at the other end of the housing. A terminal (38) is arranged in such a way that a piston (26) slides freely inside the slide hole. The terminal makes an electric contact with the accommodation hole through resin which is an electrical insulator.

A disc spring (35) which forms an other electrical contact is placed between the piston and terminal. The disc spring bends towards the terminal as pressure is applied to the disc spring by the piston. A resistance film (50) which comprises electric resistors is arranged on the surface of the disc spring.

ADVANTAGE - Improves contact of resistive film, reliably. Optimises combustion process.

Dwg.1/8

56/3,AB/4 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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010451554

WPI Acc No: 1995-352872/199546

XRPX Acc No: N95-263082

Pressure sensor for e.g. transmission fluid pressure, oil pressure - has housing with cavity filled with silicon fluid and enclosed by flexible elastomeric diaphragm with sensor in fluid which is electrically connected by terminals extending through housing

Patent Assignee: SSI TECHNOLOGIES INC (SSIT-N)

Inventor: MATTES M F; REIMER L B

Number of Countries: 007 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 677727	A2	19951018	EP 95400831	A	19950412	199546 B
JP 7294358	A	19951110	JP 9588947	A	19950414	199603
CA 2145696	A	19951016	CA 2145696	A	19950328	199608
EP 677727	A3	19960807	EP 95400831	A	19950412	199639

Priority Applications (No Type Date): US 94228305 A 19940415

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 677727	A2	E	12	G01L-009/06	
Designated States (Regional): DE ES FR GB IT					
JP 7294358	A		8	G01L-019/06	
CA 2145696	A			G01L-019/00	
EP 677727	A3			G01L-009/06	

Abstract (Basic): EP 677727 A

The sensor includes a housing (14) that encloses a cavity (88) between side walls and a recessed surface (24). A pressure sensor (50) is mounted on the recessed surface and includes a sensing bridge and an amplifier circuit. The cavity is sealed with an elastic diaphragm (90) above the recessed surface.

The cavity is filled with a silicon fluid which transmits the pressure on the diaphragm to the pressure sensor. The pressure sensor's electrical contacts are electrically connected by terminals (60,64) which are moulded in the housing.

USE/ADVANTAGE - For automobile and industrial applications. Sensor sealed from corrosive elements in environment. contamination and has sealed terminals.

Dwg.3/9

56/3,AB/5 (Item 5 from file: 350)  
 DIALOG(R)File 350:Derwent WPIX  
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010315886

WPI Acc No: 1995-217144/199529

XRPX Acc No: N95-170108

Pressure measuring device - has oil filling transmitting applied pressure to pressure sensor membrane carrying expansion measuring strips

Patent Assignee: ENVEC MESS & REGELTECHNIK GMBH & CO (ENVE-N)

Inventor: DONNER A; GILL N; LANGE J; SCHADE R; SCHROEBEL V; SCHROBEL V

Number of Countries: 021 Number of Patents: 009

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 658754	A1	19950621	EP 93810874	A	19931214	199529 B
CA 2137962	A	19950615	CA 2137962	A	19941213	199537
JP 8110278	A	19960430	JP 94310980	A	19941214	199627
US 5551303	A	19960903	US 94349608	A	19941205	199641
CN 1109971	A	19951011	CN 94119306	A	19941213	199735
EP 658754	B1	19970730	EP 93810874	A	19931214	199735
DE 59307025	G	19970904	DE 93507025	A	19931214	199741
			EP 93810874	A	19931214	
CA 2137962	C	19991005	CA 2137962	A	19941213	200007
CN 1055158	C	20000802	CN 94119306	A	19941213	200470

Priority Applications (No Type Date): EP 93810874 A 19931214

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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EP 658754	A1	G	7	G01L-009/00	
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Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

CA 2137962	A			G01L-009/00	
JP 8110278	A		5	G01L-009/04	
US 5551303	A		6	G01L-009/04	
CN 1109971	A			G01L-009/04	
EP 658754	B1	G	8	G01L-009/00	

Designated States (Regional): CH DE DK FR GB IT LI NL

DE 59307025	G			G01L-009/00	Based on patent EP 658754
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CA 2137962 C E G01L-009/00  
CN 1055158 C G01L-009/00

Abstract (Basic): EP 658754 A

The pressure measuring device has a pressure sensor provided by a base (12) and an associated membrane (10), carrying expansion measuring strips (11). The base is fitted to an insulating socket (13) with terminal leads (4,5,6,8) for the expansion measuring strips and an oil filling pipe (1).

A metal body (17) has a central recess (18,21) in both its opposing cross-sectional surfaces (19,20), coupled via a bore (22), the base and the membrane received by one of the recesses (18), the cross-sectional surface in which the recess is provided sealed to the socket. A conductive foil extends over the expansion measuring strips without contacting them and is connected to a circuit zero node, both recesses and the bore between them filled with oil, retained by a further membrane (25) across the second recess.

ADVANTAGE - Pressure measuring device is unaffected by electromagnetic interference, with long-term stability.

Dwg.5/6

Abstract (Equivalent): EP 658754 B

A pressure-measuring arrangement comprising a pressure sensor having a base (12) and an associated diaphragm (10) with strain gauges (11) deposited thereon; a header (13) of insulating material with leads (2,3,4,5,6,7,8) and with an oil filler neck (1), said header of insulating material having the base mounted thereon, and said leads making electrical contacts to the strain gauges; a metal body (17) having a first central recess (18) in a first cross-sectional surface (19), a second central recess (21) in a second cross-sectional surface (20) facing away from the first cross-sectional surface, and a hole (22) connecting the first recess with the second recess, said first cross-sectional surface being tightly joined at its edge to the header of insulating material; and said first recess accommodating the substrate and the diaphragm without touching them; a metallic separating diaphragm (25) fitted in the second recess and closing the latter at its edge; and an oil fill in the recesses and in the hole, which oil fill covers the strain gauges (11); characterised by an electrically conductive foil (23) having an opening (24) for the oil of the oil fill, said foil being disposed in the first recess as close as possible to, and covering but not touching, the strain gauges and connected to ground.

Dwg.1a/3

Abstract (Equivalent): US 5551303 A

A pressure sensor comprising a diaphragm having an upper surface, a strain gage situated on the upper surface of the diaphragm, and an electrically conductive foil situated as close as possible to, and covering but not touching, the strain gage.

(Dwg.2/3)

56/3,AB/6 (Item 6 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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010072020

WPI Acc No: 1994-339733/199442

XRFX Acc No: N94-266449

Pressure transducer for measuring pressure of vibration stressed objects  
e.g. liquid rocket engines - has sensor positioned in body with

commutation elements and cylindrical branch-pipe located in body at acute angle.

Patent Assignee: CHERNIGOV RADIO INSTR WKS (CHER-R); PHYS MEASUREMENTS RES INST (PHYS-R); POWER EQUIP EXPER WKS (POWE-R)

Inventor: DEMCHENKO O I; PEDORENKO N P; RANKUSOV N A

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
SU 1820247	A1	19930607	SU 4867047	A	19900710	199442 B

Priority Applications (No Type Date): SU 4867047 A 19900710

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
SU 1820247	A1	3	G01L-009/00	

Abstract (Basic): SU 1820247 A

Pressure transducer comprises a sensor positioned on the body (1) with a branch-pipe (3), nut for attachment to the object (26), cable terminal (5) with the conductors (6), screens (7), reinforcing cable (8), and an external metallic braid (9). The branch-pipe (3) is made with a threaded part (10), face protrusion (11), and a conical tip (12) with slots (13), and a conical part (17) is positioned on the threaded part (10). The ring (18) is fixed to the braid (9) by resistance welding. The cavity (21) is filled with a filler (23). The free space in the branch-pipe (3) between the current leading conductor (6) screens (7) is filled with an elastic filler (24).

The nut (15) part (17) internal surface taper angle is selected to be smaller than the branch-pipe (3) tip (12) external surface taper angle. The part (17) protrusion along the branch-pipe axis above its cone tip is equal to 2-5 thicknesses of cable external braid.

ADVANTAGE - Cable terminal vibration strength increased.

Dwg.1/1

56/3,AB/7 (Item 7 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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009676543

WPI Acc No: 1993-370096/199347

XRPX Acc No: N93-285736

Capacitive diaphragm-type fluid pressure transducer - has two mated half-housings partitioned by pressure transducer, on which is stacked, via spacer ring, circuit board provided with holes for receiving transducer terminals.

Patent Assignee: FUJI KOKI MFG CO (FUJI-N)

Inventor: TATE K

Number of Countries: 006 Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 570624	A2	19931124	EP 92119409	A	19921113	199347 B
US 5343757	A	19940906	US 92974021	A	19921110	199435
EP 570624	A3	19940216	EP 92119409	A	19921113	199518
JP 8021778	A	19960123	JP 95163157	A	19920521	199613
JP 8021779	A	19960123	JP 95163158	A	19920521	199613
EP 570624	B1	19960327	EP 92119409	A	19921113	199617
DE 69209493	E	19960502	DE 609493	A	19921113	199623
			EP 92119409	A	19921113	

Priority Applications (No Type Date): JP 92U33652 U 19920521; JP 92U33651 U



19920521

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 570624	A2	E	17	G01L-019/14	
Designated States (Regional): DE FR GB IT					
US 5343757	A		16	G01L-007/08	
JP 8021778	A		5	G01L-019/14	
JP 8021779	A		5	G01L-019/14	
EP 570624	B1	E	19	G01L-019/14	
Designated States (Regional): DE FR GB IT					
DE 69209493	E			G01L-019/14	Based on patent EP 570624
EP 570624	A3			G01L-019/14	

Abstract (Basic): EP 570624 A

The pressure transducer comprises two half housings **connected** to each other, one having a fluid inlet port, the other (32) supporting an outer **connector**. The inner space between the housings is airtight but partitioned by a capacitive pressure transducer (46). A spacer ring (48) and circuit board (50) are retained within the **sealed** space, and sequentially stacked on the transducer.

The circuit board has two **connection** holes (50a, 50c) for receiving **terminals** (46c) **connected** to the transducer and a base end (34a) of the outer **connector**. The **terminals** are bent like a crank and a **terminal** guide is formed in the peripheral wall of the spacer ring to guide the **terminal** into the first **connection** hole (50c).

ADVANTAGE - May be easily assembled by machine.

Dwg.4/11

Abstract (Equivalent): EP 570624 B

A pressure sensor comprising: a first cap-like half housing (30) which has a fluid inlet channel (30b) at its top portion; a capacitive pressure transducer (46) which is mounted on an enlarged opening of the first half housing (30), airtightly partitions the enlarged opening, and has a **terminal** member (46c) extending in a direction away from the fluid inlet channel of the first half housing (30); an annular spacer ring (48) which is placed on a peripheral edge portion of a side surface of the capacitive pressure transducer (46), positioned at a back side of another side surface facing to the fluid inlet channel; a circuit board (50) which is placed on a side surface of the spacer ring (48), positioned at a back side of another side surface facing to the capacitive pressure transducer (46), and has a first electrical **connection terminal** insertion hole (50c) and a second electrical **connection terminal** insertion hole (50a) being independent of the first electrical **connection terminal** insertion hole (50c) and receiving an elongated portion of the **terminal** member (46c) of the capacitive pressure transducer (46); and a second cap-like half housing (32) which supports an outer **connection terminals**, is placed on a peripheral edge portion of a side surface of the circuit board (50), positioned at a back side of another side surface facing to the spacer ring (38), and is engaged with the first half housing (30) in a state that an end portion (34a) of the outer **connection terminal** is inserted into the first electrical **terminal** insertion hole (50c) of the circuit board (50), and the capacitive pressure transducer (46), the spacer ring (38), and the circuit board (50) are sandwiched by the first and second half housings (30, 32), characterized in that the **terminal** member (46c) of the capacitive pressure transducer (46) is bent like a crank, and a **terminal** member guiding portion (48a) is formed in a peripheral wall of the spacer ring (48) to receive the **terminal** member of the capacitive pressure transducer and to

guide the terminal member to the second electrical connection terminal insertion hole (50a) of the circuit board (50).

(Dwg.1/11B

Abstract (Equivalent): US 5343757 A

The pressure sensor comprises two half housings connected each other, one has a fluid port and the other supports an outer connector. The inner space of it is airtightly partitioned by a capacitive pressure transducer. In the sealed space, a space ring and a circuit board are sequentially stacked on the transducer.

The board has first and second connection holes for receiving a terminals of the transducer and a base end of the outer connector. The terminals is bent like a crank, and a terminal guide is formed in the peripheral wall of the spacer ring to guide the terminal into the first connection hole.

USE/ADVANTAGE - Can be easily assembled and is suitable for assembly by a machine.

Dwg.8/11

56/3,AB/8 (Item 8 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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WPI Acc No: 1990-298273/199040

XRPX Acc No: N90-229346

Electrically-conducting lead-through e.g. for pressure sensor - comprises insert e.g. sleeved terminal connector through bore in insulating material

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Number of Countries: 016 Number of Patents: 009

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 3909186	A	19900927	DE 3909186	A	19890321	199040 B
WO 9011610	A	19901004				199042
EP 414872	A	19910306	EP 90904298	A	19900315	199110
JP 3501061	W	19910307	JP 90504542	A	19900315	199116
US 5194697	A	19930316	US 90496460	A	19900320	199313
EP 414872	B1	19940105	EP 90904298	A	19900315	199402
			WO 90EP419	A	19900315	
DE 59004109	G	19940217	DE 504109	A	19900315	199408
			EP 90904298	A	19900315	
			WO 90EP419	A	19900315	
ES 2047920	T3	19940301	EP 90904298	A	19900315	199413
CA 2028113	C	19971209	CA 2028113	A	19900315	199810

Priority Applications (No Type Date): DE 3909186 A 19890321

Patent Details:

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DE 3909186 A 6

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Designated States (National): CA JP

Designated States (Regional): AT BE CH DE DK ES FR GB IT LU NL SE

EP 414872 A

Designated States (Regional): AT BE CH DE ES FR GB IT LI LU NL SE

US 5194697 A 5 H01B-017/26

EP 414872 B1 G 7 H01J-005/32 Based on patent WO 9011610

Designated States (Regional): AT BE CH DE DK ES FR GB IT LI LU NL SE

DE 59004109	G	H01J-005/32	Based on patent EP 414872
			Based on patent WO 9011610
ES 2047920	T3	H01J-005/32	Based on patent EP 414872
CA 2028113	C	G01L-007/02	

Abstract (Basic): DE 3909186 A

The passageway comprises a bore (2), a high temp. resistant and vacuum serviceable insulating part, pref. of ceramic, glass or a single crystal. The bore accommodates a soldered insert or a **terminal** conductor (4) soldered in place by means of an active solder sleeve. On at least one of the surfaces of the insulating material a conducting layer (14,15) or track, or both are provided.

The mfr. process involves inserting a sleeved **terminal** connector in the bore or filling the latter with active solder wire and then placing the fitted insulating part in a vacuum and heating it until the solder has fully melted. Pref. the part is placed in a gas atmosphere at a max. pressure of 10Pa and heated. The gas may be inert, reactive or a mixture of the two.

USE/ADVANTAGE - Pressure sensor (10) with diaphragm (11) and base (12) held short distance apart and with conductive layers (14,15) on their inner facing layers. Inexpensively mfd. in single high-temp. step. Can accept heavy mechanical load and retain high vacuum sealing.

Dwg.5/5

Abstract (Equivalent): EP 414872 B

Electrically conductive feedthrough connection through a hole (2) of a high-temperature-resistant and vacuum-proof insulating part (1), particularly of ceramic, glass, or a single crystal, which feedthrough connection is designed as a **terminal** lead (4) covered with active solder and soldered into the hole, the **terminal** lead having a coefficient of thermal expansion less than that of the insulating part (1).

Dwg.1a,b/4

Abstract (Equivalent): US 5194697 A

The mechanically heavily loadable and high-vacuum-tight feedthrough connection through a hole (2) of a high-temperature-resistant and vacuum-proof insulating part (1), particularly of ceramic, glass, or a single crystal, is disclosed which can be produced in a single high-temp. step. It is designed as a **terminal** lead (4) covered with active solder and soldered into the hole, the **terminal** lead having a coefficient of thermal expansion less than that of the insulating part. The feedthrough connection is preferably used in a capacitive pressure sensor (10) having a diaphragm (11) and a substrate (12) which have spaced-apart, flat inner surfaces which are provided with at least one conductive layer (14, 15) for forming at least one capacitor and are electrically connected to the respective rear side via the feedthrough connection. USE - In pressure sensor. (Dwg.1a/4)